

A
T R E A T I S E
O N
R U P T U R E S.

B Y
P E R C I V A L L P O T T,
SURGEON to St. Bartholomew's-Hospital.

Chirurgia non quidem medicamenta atque victus rationem omittit, sed manu tamen plurimum præstat; estque ejus effectus inter omnes medicinæ partes evidentissimus.

A. CORN. CELSUS



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ons



TO
Mr. Edward Nourse.

S I R,
I HAVE always thought
myself much obliged
to you for your repeated
advice to me, in the early
part of my life, to apply
myself to anatomy and the
theory of our profession.

Whether I have profit-
ed by it or not, the advice

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DEDICATION.

was good, and my obligation is the same; I therefore desire your acceptance of the following Treatise, not only as a proof of my estimation of your judgment, but as a mark of the gratitude, of

S I R,

your most humble servant,

Watling-street,
Feb. 9, 1756.

PERCIVALL POTT.

P R E F A C E.

THE benefits derived to mankind from the art of surgery are so many, and so great, that the smallest attempt toward an improvement in it has a claim to a favourable reception.

The many useful and instructive books which have been published within the last half century, and the many able and judicious practitioners with whom all Europe, and particularly this

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country, abounds; may be thought to render the following treatise unnecessary: I am, myself, satisfied that it is so with regard to the majority of the profession; but as some part of it may, without offence, be presumed to be less informed (not having had the same opportunities of information) I hope to be excused attempting to convey instruction to those who may stand in need of it, and shall always be glad to receive it myself.

From the disease which is the subject of the following tract, no age or sex, no rank or condition of life is exempt; upon the proper or improper treatment of
it

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it the life of the patient frequently depends; it sometimes requires one of the nicest operations in surgery; and has, in all times subjected mankind to the grossest and most iniquitous frauds, imposed upon them by knavish and ignorant pretenders, who have neither anatomical nor surgical knowledge to support them, and whose credit is built on the credulity and bashfulness of those who fall into their hands.

The trusses put on abscesses, bubo's, hydroceles, and unreduced ruptures, are melancholy proofs of their ignorance: the number of deluded people who have paid largely for attendance

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on ideal ruptures, and the still greater number who have been at great expence for cures which were never performed, are well known proofs of their dishonesty.

The generality of mankind look upon a rupture as a kind of imperfection in their form, and as a disease which impairs their strength and abilities; and the more modest and bashful are fearful of having their disorder known from the mere situation of it.

With this opinion and this fear, these pretenders are well acquainted, and very lucrative use do they make of them; they
well

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well know, that the man who looks on his disorder as a material imperfection in his form, or as the cause of any debility, will be glad to be rid of it at almost any expence or trouble: hence the ignorant and credulous are subjected to tedious confinements, painful applications, and hazardous operations, while the timorous and bashful are cheated out of large sums of money for imaginary diseases or pretended cures.

Complaints of this kind coming from the profession are received but ill, and set to the account of prejudice, interest, and physick-craft; but in this mankind do us much injustice: a rupture is a disease which, if judiciously

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diciouſly and properly treated from the firſt, cannot be productive of much profit to the ſurgeon; it requires very little attendance, and neither external application nor internal medicine; and though his hand and judgment are neceſſary to return the inteſtine and direct the application of a proper bandage, yet it muſt be obvious that no great emolument can ariſe from thence: if the profeſſion may be allowed to be impartial in any thing which relates to themſelves, I think they may in this, from which they never can receive any conſiderable profit, unleſs they are called to accidents ariſing from great negligence of the patient, or the miſconduct of pretenders.

Hac

Hac fonte derivata clades.

I have no intention to write a panegyric on surgery or surgeons; they, like all other bodies of men, and indeed like every individual, must stand or fall by their own conduct and merit. But as the specious pretence for the encouragement of quacks made use of both by themselves and their patrons is, that through mere obstinacy we never depart from the customs of our ancestors, nor attempt any thing new, though mankind might be much benefited thereby; I must beg leave to be indulged a few words on this subject.

That

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That many of our ancestors had great merit, and have left many noble proofs both of their sagacity and dexterity, is known to every man who is at all acquainted with them.

On the other hand it must also be allowed that they laboured under many disadvantages, both in their theory and in their practice.

These disadvantages were principally owing to the imperfect state of their anatomy, in the cultivation of which kind of knowledge, the people of the present age have had such assistance, as would convert

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vert ignorance into a vice, and render them inexcusable.

This is the only true and solid basis on which surgery can firmly stand; this must for ever supply the first elements of all medical knowledge, and give to an operator that due mixture of coolness and boldness which will equally guard him against the inconveniences arising from too much or too little caution, and enable him to fulfil the advice of the elegant author of my motto——*Non magis quam res desiderat properet, vel minus quam necesse est secet.*

By anatomy I would not be understood to mean the *seriæ nugæ*

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nugæ of microscopical anatomy ;
but a perfect knowledge of all
the obvious and apparent parts of
the human structure, the laws
of its œconomy, the rules by
which its health is maintained,
the manifest causes of diseases,
their symptoms in the living,
and their appearance in the
dead.

This science has, within these
fifty years, been very assidu-
ously cultivated; many useful
discoveries have been made, and
the practice both of physic and
surgery been thereby consider-
ably improved : in different
parts of Europe many emi-
nent men have appeared, Bidloo,
Cowper, Ruysch, Swammerdam,

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the late ingenious Dr. Douglass, Heister, Morgagni, Albinus, Winslow, Monro, Haller, Hoffman, Nichols, Hunter, and others, who have traced and explained the animal structure, with such indefatigable pains and industry, as will derive honour both to themselves and their scholars, and preserve their reputation as long as anatomical knowledge shall be thought useful or necessary.

And that this has not been confined to the dissecting rooms of anatomists, or served only for the amusement of the speculative; the many improvements that have been made in the practice of surgery, and the many
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ingenious and practical observations that have been published in the several parts of Europe, within these few years, will appear as proofs.

The practical part of the ancient surgery was coarse, and loaded with a farrago of external applications; some of which were unnecessarily painful, and others absolutely ineffectual, to say no worse of them: and the operative part of the art was encumber'd with a multiplicity of awkward unmanageable instruments.

The moderns have brought the practice into a much narrower compass, have rendered
it

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it more intelligible and less painful: They have made many beneficial alterations in the operative part; and by a reduction of the number of instruments, and a perfect simplicity in the structure of those in use, they have considerably assisted the dexterity of an operator, as well as shortened the time of an operation.

—We now know from experience, that some of those cases which used formerly to be treated with much severity with escharotic and caustic medicines, are to be brought into a kindly and healing state, by means that are rather lenient than painful: and though caustic applications are still useful, and in some few

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cases absolutely necessary, yet we are much more sparing in the use of them, and find that we can obtain the same end by means which are milder, and not productive of such indelible marks.

The present easy method of treating wounds made by gunshot; the disuse of long probes and long forceps, armed with teeth, for the extraction of foreign bodies; with the liberty which the present practitioners have taken of varying from an old established rule, viz. that all such bodies must be extracted at all events, has saved many a limb and life in our fleets and armies;

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armies †; and will in its consequence have a still more extensive and beneficial influence, by inculcating a precept which should stand at the head of the *monita chirurgica*, and never be out of the mind of a practitioner, viz. that it will sometimes happen, that the less he does, the better he will succeed, as he will thereby give nature an opportunity of availing herself of those powers and faculties with which her Almighty Author has endued her, which will frequently be found sufficient for all her purposes, and to assist which, should be the

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whole

† See Mr. Serjeant Ranby's treatise on gun-shot wounds.

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whole aim both of phyfic and surgery.

The improvements made in the operative part of surgery are as conspicuous.

The double incision in amputations, by which so much skin is preserved, as to produce a more seemly and less painful stump, and by which it is much sooner healed.

The present manner of removing cancerous breasts and encysted tumours, by which large frightful scars are avoided, and much time saved.

The lateral operation for the stone. The

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The cutting gorget calculated for the more easy and expeditious extraction of the stone from the bladder.

The extraction of the opake corpus chrySTALLINUM from the eye.

The operation of amputation in the joint of the shoulder.

Drawing off all the water at once in a dropsy.

The certain and expeditious manner in which we now, by a very simple piece of machinery, cure those two terrible deformities in the ankles and feet of infants, called vari and valgi;
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with many others which might be named, are certain and undoubted improvements in the art, improvements made by the moderns, and such as mankind are much benefited by, as their pains are hereby lessened, the elegance of their figure preserved, and the time of their confinement shortened; all which will, I presume, be allowed to be advantages while human nature shall remain sensible of pain, while scars shall be thought deformities, or confinement be deemed irksome.

But though these, and many other valuable amendments, have been made, it is not denied but that large room is still left for the
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industry of us and our successors.

Some of the operative parts of surgery are still capable of amendment ; some diseases remain incurable ; and the immediate causes of some others are unknown to us : the operation of lithotomy is still frequently necessary, notwithstanding all our boasted lithontriptics ; schirri remain indissoluble ; cancers continue their ravages, unchecked by art ; and the various mischief arising from injuries done to the head by blows, falls, &c. are so undistinguished from each other, as to create much trouble, uncertainty, and vexation in practice.

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Possibly the industry of future practitioners may discover something whereby mankind may be relieved in these disorders: the lues venerea and intermittent fevers had afflicted the world long before their specific remedies were discovered; and mankind had laboured under pain long before opium, that solamen miseris, came to their relief; schirri and cancers may possibly hereafter find a cure, and human nature be thereby freed from one of its most severe afflictions; this remains for posterity to search after, and I heartily wish they may be successful in their enquiries.

But

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But from what has been said, I hope it will appear, that the surgeons of the present time have taken the liberty of varying from their ancestors, where they thought they could do it with safety and to the advantage of mankind (the only reasons that could warrant such variations): that though some parts of the art may still appear defective, this deficiency does not arise from want of application, or from obstinacy, in the practitioners, but from the hitherto inscrutable nature of some diseases, and the untameable fury of others: that instead of supinely giving up their understandings, or lazily treading in the beaten track of their forefathers,

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fathers, they have endeavoured to advance the reputation and utility of their profession by the only means whereby it is capable of advancement, viz. a sedulous application to anatomy, the frequent examination of dead morbid bodies, and making such experiments on the living, as they had great reason to believe would prove beneficial: The event has proved successful; multitudes have felt the benefit, and posterity will reflect on the authors with gratitude.

As the following treatise has lain by me some time, I have frequently altered and corrected it as a more extensive practice has furnished me with reason for so doing;

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doing ; and as it is now presented to the public, I am not conscious of there being any thing in it which is not strictly true.

I have endeavoured to express myself on the disease, and its proper treatment, in as plain, explicit, and intelligible a manner as I am capable of, and the subject will admit ; being desirous, as much as in me lies, to inform mankind of the true nature of the disease, of the dangers they incur, and the frauds they are liable to from the ignorance of one set of quacks, and the worse qualities of another ; to shew them what the art of surgery, in honest and judicious hands, is capable of doing in this
dis-

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disease, and how essentially the conduct of an impostor differs from that of an honest man, who will never be ashamed to acknowledge that he cannot do what is not in his power.

*Falsus honor juvat, et mendax infamia
terret,*

Quem nisi mendosum et mendacem ?

With regard to the profession, I have only to add, that as it is principally designed for those whose early time of life, or little opportunity of learning business, but from books, renders them proper objects of such information; the more experienced reader ought not to be displeased at what may appear to him trite. And though I have presumed to
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become an author on a subject which I have taken some pains to consider, yet I am satisfied, many things may have escaped me, which may appear to others, who may also see the same circumstances in a different light.

The general appearances of diseases will always be much the same, and consequently the general descriptions of them will be much alike also; where I have taken the liberty to differ from the general opinion or doctrine, I am very sure I have done it with diffidence, and I hope with civility, inasmuch as I have no inclination to cavil or find fault,
but

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but merely to inquire into truth,
for the improvement of myself
and others, and the general be-
nefit of mankind.



A

A
TREATISE
ON
RUPTURES.

S E C T. I.

BY the term rupture, hernia, or descent, is meant a tumor produced by the falling down, or protrusion of some part or parts which should naturally be contained in the cavity of the belly.

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The places in which these parts make their appearance in order to form what is called a rupture, are the groin, the scrotum, the navel, the labia pudendi, the upper and fore part of the thigh, and every point of the anterior part of the belly. The parts principally liable to suffer this protrusion, or descent, are a part of the omentum or caul, a portion of the intestines, and sometimes (tho' very rarely) a portion of the stomach.

From these two circumstances of situation and contents, are derived the different appellations by which the different kinds of ruptures

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tures are distinguished from each other.

From their situation they are called inguinal, scrotal, femoral, umbilical, or ventral ruptures, as they happen to make their appearance in the groin, scrotum, thigh, navel, or belly.

If the prolapsed body be a portion of intestine, the tumor is called enterocele, hernia intestinalis, or intestinal rupture; if it is omentum, it is called epiplocele, hernia omentalis, or omental rupture; if both intestine and caul conspire to form the tumor, the name is compounded of both contents, and is called enteroepiplocele.

The vulgar supposition that these bodies descend thro' passages forcibly made by breach or laceration of the containing parts, is not true; at least with regard to the inguinal, scrotal, femoral and navel ruptures: the apertures by which the three former descend are natural to every human body, as well those who have not, as those who have ruptures, and permit the transit of the caul, or gut only by being dilated. The principal passages are those on each side of the lower part of the belly near the groin, thro' the tendon of one of the abdominal muscles; and the hollow formed under what is commonly called Poupart's or Fallo-

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Fallopious's ligament, in the upper and fore part of the thigh; through the former the spermatic vessels pass to the testicles in men, and the ligamenta uteri in women; and thro' the latter the great crural vein and artery to the thigh and leg in both sexes.

A short anatomical description of these parts is somewhat necessary to understand rightly the true nature and situation of this disease. The pair of muscles called obliqui externi or descendentes, cover all that part of the belly which is without bone, and the lower and fore part of the thorax; they are fleshy on the sides, and tendinous in the mid-

dle and lower part; they spring from the seventh and eighth ribs and all below them, by fleshy portions which indigitate with corresponding portions of two other muscles called the serratus major anticus, and latissimus dorsi, and becoming tendinous are inserted into the linea alba, spine of the os ileum and the os pubis.

What is called Poupart's or Fallopius's ligament, is nothing more than the lower border of this tendon stretched from the fore part of the os ileum or haunch bone, to the pubis: the tendinous fibres of this muscle as they proceed obliquely downward, diverge and leave several small apertures for the passage of vessels

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vessels and nerves, and as they are inserted into the pubis they cross each other and are interwoven, by which the insertion is much strengthened.

At the lower part of the belly, a little above the pubis, the fibres of these tendons separate from each other, and form thereby a large oval aperture on each side, just above the groin, thro' which pass the spermatic vessels to the testicles in men and the ligamenta uteri in women, in whom this aperture is much smaller than it is in men; as the ligamentum uteri is also much smaller than the spermatic chord.

The other muscles of the belly having no immediate concern with the present subject, I shall take no other notice of them than only to observe, that the spermatic chord does not pass thro' any openings in these, but under the lower edge or border of two of them, (*viz.* the obliquus internus, and transversalis) at such distance and in such manner, that no action of these muscles can make any stricture upon it.

The inside of these muscles, and indeed the whole cavity of the belly, is lined by a smooth, firm, but easily dilatable membrane called the peritoneum, a
minute

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minute anatomical description of which would lead me beside my present purpose; let it suffice to observe, that it lines the whole cavity of the belly, and gives an external coat to all the viscera contained in it.

Behind the peritoneum lies a loose cellular membrane called its appendix; this is found in very different quantity in different places, in some it is plentifully stocked with fat, in others it is void of fat, and is the same sort of cellular membrane as is found all over the body.

This cellular membrane (void of fat) enveloping the spermatic chord is called the tunica vaginalis

nalis communis, or tunica vaginalis of the chord; which chord thus enveloped, passes out from the cavity of the belly, under the edge of the transversalis, and internal oblique muscles, and thro' the aperture in the tendon of the external oblique, just above the groin.

The hernia or rupture in its sac (soon to be described) is pushed from the cavity of the abdomen thro' the same aperture, and insinuates itself into the tunica vaginalis, in such manner, as to be totally enveloped by it, and to lye anterior to the spermatic vessels, or chord.

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The tunica vaginalis testis is a distinct membrane, forming a distinct cavity, including the testicle and a small quantity of limpid fluid.

The acknowledged use of the muscles of the belly is to expel the faeces and urine, to help the digestive organs by gentle and frequent compression, to assist in the act of vomiting, and by depressing the ribs and forcing the diaphragm upward to contribute to expiration.

By the action of these and of the muscles of respiration, the contents of the belly are continually pressed upon, and in some actions
and

and exertions of strength pressed on with great, and sudden force, and as our erect posture favours the descent of the contained parts toward those places which lie low and are little defended, a portion of gut, or caul will sometimes slip through, and the less the natural strength of the subject, the more likely will this be to happen, which is one reason why children are more subject to this disorder than adults.

This is the most probable and natural account of the origin of the ruptures of children and adults, but will not account for those of infants, in whom we very frequently find them soon after birth, when erect posture can

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can have had no share in their production.

If the testicles of a foetus were down in the scrotum, dependent from the spermatic chord, as they are in an adult, they would in some postures and dispositions of the child at the time of parturition be very liable to be hurt; to prevent which, and possibly for other reasons also, the testicles of a foetus during its residence in the uterus, lie within the abdomen, behind the peritoneum, defended by the bone; soon after birth, when the lungs come to be distended with air and press on the diaphragm, when the muscles of respiration act, and those of the abdomen
be-

begin to squeeze the contents of the belly, the testicles are pushed out thro' the apertures in the abdominal muscle (called the rings) into the upper part of the scrotum : This passage of the testicle from the belly into the scrotum, I take to be the principal cause of the ruptures of infants, for the ring or aperture being by this means dilated, a portion of caul or gut has an opportunity of slipping thro' before the aperture has had time to contract itself again, and which protrusion will be forwarded by the continual efforts of the child in crying.

This has always appeared to me to be the case ; and in this

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I am more confirmed by observing that almost all the infants that are ruptured within the first five or six months of their life, are males. But whether this is the case or not, certain it is, that the greater part of ruptures have their rise in early infancy, are produced gradually, are very small at their first appearance, and are seldom seen or regarded in children, till they have got below the groin, more or less into the scrotum.

This descent or protrusion will happen frequently, when the infant strains to cry, or to empty the intestines of fæces, and will return up again as soon as the child is quiet; the nurses call it
wind,

wind, and it is generally at first neglected, the child not being apparently injured, and the people about it not knowing the consequence.

Neither the intestine nor omentum can descend thro' either of the above-mentioned apertures in the groin or belly, without thrusting before them a portion of the peritoneum, in form of a bag or pouch, not unlike what is called a thumbstall, in which the piece of gut or caul is included; this is called the hernial sac; and as this descent will frequently happen unregarded, from the manner in which our children are cloathed, and the few opportunities we have of see-

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seeing them naked, this sac, consisting of a fine and easily dilatable membrane, will by each descent be prolonged or lengthened, and pass gradually from the groin into the scrotum.

It has been the opinion of some, and, among the rest, of Mr. Cheselden, that the sac of a hernia is not an elongation of the peritoneum, but formed like the sac of an aneurism, and that of some other tumors, by the thickening of the common membranes from pressure and obstruction: however true this may be in some cases, it most certainly is not so with regard to the present, the hernial sac being clearly and demonstrably a portion of the peritoneum,

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ritoneum, lengthened gradually by the descent of its contents, and becoming thicker as it is lengthened.

Whether the sac in its infant state, while it is very thin and has contracted no adhesions, ever re-ascends into the belly with the intestine, I will not pretend to determine ; but am much inclined to think it does not, from the facility with which the parts composing a rupture descend, after they have been few times down, and from a fulness which may generally be felt along the process of such children as have been ruptured ; some few of which I have had an opportunity of opening after death, and have
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always found the sac in the scrotum.

From the natural laxity of the whole frame of infants, from the softness and flexibility of their fibres, and from their frequent efforts in crying, this protrusion or descent will happen frequently ; when down, the nurse's hand or a warm cloth generally serve to return it ; and, as I said before, it passes for wind and is neglected, till it happens to be seen by some person of judgment, or creates trouble to the child.

This is the general date, origin, and first rise of this disease ; but to this there are several exceptions : There are many in-

stances of ruptures making their first appearance in adults, who have not been ruptured while they were infants ; and there are several instances of ruptures produced by efforts, blows, &c. instantaneously : but the most frequent origin is that which I have mentioned ; and by what has come within my observation, it has appeared to me that the generality of the scrotal hernias of adults have been derived from childhood, and those ruptures which have made their first appearance in mature age, have generally remained inguinal ruptures.

I take no notice of the old dispute about the dilatation or laceration

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ceration of the peritoneum, as it is agreed by every body, and indeed is plainly demonstrable that the peritoneum is dilated to form the hernial sac, but tho' dilated to a very great degree, yet always remains entire; the case, quoted by Mr. Sharp, of the intestine being found in contact with the testicle, being an accidental thing, and to be ranked as such, or as one of the *lufus naturæ*.

The signs of an inguinal or scrotal rupture are a tumor in the groin or upper part of the scrotum, beginning at the ring of the abdominal muscle, and extending more or less downward; which tumor appears dif-

C 3 ferently

ferently to the touch, according to its different contents.

If a portion of intestine forms the tumor, and that portion is not a very small one, its surface is smooth and renitent, but much more so upon the actions of coughing, sneezing, &c. upon every effort of which it feels as if it was blown into.

If a piece of omentum has slipped down, it has a more flabby feel, seems to have a more unequal surface, makes less resistance to the finger, and gives the scrotum a less round figure; and if the portion is large and the subject adult, it is in some measure distinguishable by its weight;

weight; if it consist of both intestine and omentum, the judgment to be formed by the touch will be less clear and distinct; but in this as well as many other parts of surgery, there is a *tactus eruditus*, which may be obtained by practice and reflection, but of which no clear idea can be verbally conveyed.

The intestine most frequently found in a scrotal hernia, is a portion of the ileum, though it is no very uncommon thing to find a portion of the colon and the cæcum with the *appendicula vermiformis*.

The only diseases with which this can possibly be confounded are

are the hydrocele, and that defluxion on the testicle called hernia humoralis. In the hernia humoralis the testicle and epididymis are plainly to be felt, and their hardness discovered; and in the hydrocele, however full the cyst may be, it plainly terminates at the ring of the muscle; beside which, the fluctuation of the water, and the absence of painful symptoms, will plainly point out this disease, and distinguish it from a hernia, to any man at all acquainted with either.

Upon the reduction of the parts by the hand, if the rupture consisted of a portion of intestine only, it generally slips up at once,

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once, makes a kind of gurgling, which may sometimes be heard, but always may be distinguished by the finger, and leaves the scrotum quite free from any preternatural body ; if it consisted of a piece of omentum, it returns up more gradually and without any of that sensation to the finger which the intestine produced ; if it consists of both intestine and omentum, the intestine generally goes up first, leaves a flabby kind of body behind which is returnable also, but not in the same manner as the intestine, inasmuch as it returns more gradually and generally requires to be followed by the finger to the last.

Rup-

Ruptures differ from each other, not only in the place of their appearance, and in their contents, which make their general difference ; but each individual rupture has some particular circumstances which are necessary to be considered in order to form a right judgment of it: These are the subject in whom it appears, its date, its symptoms, and the probability or improbability of its being returnable.

If the subject is an infant it is not often attended with much difficulty or trouble, the softness and ductility of their fibres generally render reduction easy ;
and

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and though from neglect or inattention it may fall down again, yet it is again easily returned, and at this time of life seldom produces any mischief. I say seldom, because there are instances to the contrary, and I have, myself, seen an infant under a year old die of a strangulated hernia, with all the symptoms of mortified intestines, tho' the rupture had been down but two days.

If the subject is adult, and in the vigor of life, the consequences of neglect or male-treatment are more to be feared than at any other time of life, for reasons which are very obvious.

The

The great and principal mischief to be feared, in all descents of the intestine, is a stricture; this stricture is made by the borders of the aperture in the tendon, through which the intestine passes from the belly into the groin or scrotum; and it must be obvious, that the more the natural strength of the subject is in general, and the more liable to inflammation, the more probability there will be of stricture, and the more mischief that stricture will be likely to produce.

Hence it must evidently appear, that if the subject is adult and in the vigor of life, at which

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time the solids are most elastic, the impulse of the heart strongest, and the circulation of the fluids most brisk, that the consequences of neglect or misconduct must be more hazardous than in the soft, flaccid state of infancy, or the languid circulation of old age.

In very old people the symptoms do not usually run so high as in young, as well on account of more languid circulation, as that their ruptures are generally of antient date and the parts much relaxed. But then it should also be observed, that they are by no means exempt from inflammatory symptoms, and that when such do occur, the unavoidable

voidable infirmity of old age is no favourable circumstance in the treatment which may become necessary.

With regard to the date of the disease, if it is of some standing, has been neglected, and has been frequently down without giving any trouble, the aperture in the tendon and the hernial sac may both be presumed to be large; which circumstances render immediate reduction rather less necessary; on the contrary if the hernia be recent, or (tho' old) has been generally kept up, its immediate reduction is absolutely necessary, inasmuch as the risque of stricture is in these circumstances much greater.

If

If the rupture is very large and antient, the patient far advanced in life, the intestine does its duty in the scrotum, and no other inconvenience attends it than that produced by its weight, it will be better not to attempt reduction, inasmuch as it will most probably be fruitless, and the necessary handling may prove troublesome: this must be understood of those which are not attended by any symptoms of stricture, such symptoms making reduction absolutely necessary at all times, and in every circumstance.

With regard to contents, if it is omentum only, and has been

been gradually formed, it seldom produces any bad symptoms; though its weight may become very troublesome; but if produced suddenly by effort or violence, it will sometimes prove very painful, and cause very troublesome symptoms, the connection between the omentum and stomach being such as to make the descent of a large piece of the former productive of nausea, and vomiting: when engaged in a stricture it has been the cause of still worse symptoms by becoming gangrenous; and though it should not be attended by any bad symptoms dependent on itself, as a mere omental rupture, yet it may, upon any extraordinary effort or exertion
of

RUPTURES. 33

of strength, be productive of an intestinal hernia and all its consequences by keeping the ring and sac constantly open.

If it is a portion of intestine only which forms the hernia, the risque is greater, strangulation being more likely to happen and more productive of mischief when it has happened; the smaller the portion of gut is which is engaged, the tighter the stricture binds, and the more hazardous the consequences. I have seen a fatal gangrene in a bubonocoele in less than thirty hours, in which the piece of gut did not exceed an inch, and had never been down before.

D

Every

Every thing considered, I think, it may be allowed, with some few exceptions, that an intestinal rupture, considered in a general sense, is subject to symptoms and to danger, which an omental rupture is not subject to; that bad symptoms are more likely to attend recent ruptures than old ones; that a descent of intestine only, is rather more likely to produce mischief than when it is accompanied by a piece of omentum; and that no true and proper judgment can be formed of any hernia, unless every circumstance relative to it is duly considered.

The

R U P T U R E S. 35

The cure of a rupture has always been divided into perfect or radical, and imperfect or palliative; a distinction, which tho' just and true, and founded upon reason and experience, has, by being misunderstood, been the occasion of much undeserved censure on the profession.

The means used to procure both kinds of cure are exactly the same, and the event is dependent on causes which the surgeon can neither foresee nor direct.

This is a seeming paradox which mankind in general do not understand, an anatomical

acquaintance with the parts concerned in the disease being absolutely necessary to such knowledge. They conceive that the means made use of to produce a radical cure are, or should be very different from those made use of merely to palliate; and this conception, or rather misconception, lays them open to all the fraud and delusion of impostors.

To labour under a troublesome disorder, perhaps in the most active and joyous part of life, and to be told that a palliative cure by wearing a bandage is all that can be expected is very disagreeable; the true reason of this, they are
not

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not acquainted with, and are easily induced to believe what is insinuated to them, viz. that the regular part of the profession are deficient in the knowledge of the proper treatment of this disease; their application is therefore made to those who promise most; *quod volumus facile credimus*; ignorance of the true nature of the disease, and a strong desire to be cured on one side, and bold and plausible assurances on the other, carry on the delusion, till time and the continuance of the rupture evince the truth and prove the fraud, which the patient, tho' perfectly convinced, will often join in concealing, either to avoid being laughed at for

his credulity, or to prevent a discovery of his infirmity.

All that can be done by surgery toward the cure of a hernia, is to replace the prolapsed body or bodies in the cavity of the belly, and to prevent them from slipping out again.

This is all that art can do in either sex and in every age; but nature, according to the age of the patient, the date of the rupture, the sort of rupture, and some other circumstances, is capable when properly assisted, (and not interrupted) of doing more, and of confirming that as a perfect cure in some, which
in

R U P T U R E S. 39

in others she is obliged to leave imperfect, and constantly requiring the assistance of art.

When the portion of gut or caul, or whatever formed the tumor, is perfectly and properly replaced in the belly, and an opportunity thereby given to the tendinous aperture to contract itself, and for a proper bandage to bring the sides of the entrance of the hernial sac as near together as it will admit, the surgeon has done his part, the rest is nature's; and whether these parts will so contract as to prohibit a future descent or not, is matter of uncertainty and not to be known but from the event.

This every judicious man knows, and every honest man will say,

All the pretensions which have in all times been made by different people to remedies endowed with such virtues as to be capable of consolidating the parts supposed to be tore, or of constringing those which are dilated, have all proved inefficacious, and delusive, to say the best of them; the parts most immediately concerned in this disease are quite out of the reach of any applications; and all the relief which the patients of these pretenders have found has been from the long rest to which they have been

R U P T U R E S. 41

been subjected, or the strict bandage which they have wore. Many of these people having never worn any bandage at all before, are easily persuaded that the relief which this has given to them, has been produced by the applications which have been made to the part, or by the medicines which they have taken, all which were used merely to deceive them, and which never had, nor ever can have, any share in the cure of a rupture.

By what has been said, I would not be understood to mean, that when the gut or caul are once replaced, the patient can receive no farther benefit from surgical assistance : nor that
every

every rupture in adults or persons of mature age is incapable of cure: this is far from my meaning, and far from truth: there are many circumstances in ruptures and ruptured patients which require frequent assistance, without which the probability of a cure will be much less: and there are many ruptures in persons of mature age which will admit of perfect cure, if properly and judiciously managed from the first.

I only mean to obviate the vulgar prejudice so constantly encouraged by all quacks, that there are medicines and applications which are specific in the cure of this disease; and of which they

R U P T U R E S. 43

they are possessed; neither of which is true.

A few words may serve to explain this matter. The general doctrine is, that the ruptures of infants, and those of very young subjects, generally admit of perfect cure: those of adults less frequently, and those of old people hardly ever: all which is, in general, true,

The difference between these three general states is principally, if not entirely, owing to the different state of the hernial sac and tendinous aperture at these different ages.

The

The hernial sac has been described as being a production or elongation of the peritoneum, thrust down before the body, which by its descent from the belly forms the hernia; at first (that is while the hernia is recent) this sac is small and thin, and, as I observed before (to use a familiar image) like a thumb-stal, or the extremity of a finger of a glove cut off; it hardly ever (if ever) returns into the belly after it has been once down, but by repeated descents of the caul or gut into it, being of a very dilatable nature, is continually lengthened and enlarged; when it has got below the groin into the scrotum, it acquires a pyriform or pear-like figure, with
its

its neck or narrow part next the abdomen, and its broadest part expanded more or less in the scrotum, according to the size, date, and quantity of contents; in young subjects, and recent ruptures, it is very thin, but in proportion as it is extended in length it increases in thickness, and in time acquires a very considerable degree of thickness, firmness and hardness.

In infants, in very young subjects, and in recent cases, this sac from its thin soft state, is capable of having its upper narrow part or neck so compressed by proper bandage, as possibly to procure an union of the sides of it, at least so to lessen
the

the passage of it as to prevent the future descent of any thing into it from the abdomen ; which produces a perfect cure.

In those of mature age, or whose ruptures are of some standing, and consequently the neck or entrance of the sac large in proportion to the age, size of the subject, and date of the rupture, the membranes composing it being more thick, firm, and hard, the compression of its neck so close as to prevent the passage of any thing through it, is more difficult, and uncertain. In old age, and old ruptures, the still greater firmness and hardness of the sac, render it less compressible,
and

and consequently the occlusion of the passage by this means still more impracticable.

From this account of the different state of the hernial sac it must appear, that all these circumstances will be very various in different persons; that not only the difference of age in the subject, and date of the rupture, but that of habit, constitution, &c. must produce a great variety in these cases, and consequently that the precise age and subject that will or will not admit a perfect cure, must be very uncertain, and not in the power of the most judicious man to determine absolutely, tho' from many circumstances he will generally

nerally know when it is very improbable or impossible.

From the same considerations it will appear that recent ruptures, if immediately and properly taken care of, admit a perfect cure at almost any age; as do also most of those which, tho' in adult subjects, are got no lower than the groin.

From the same consideration, it will appear, that tho' the firmness of the hernial sac, and the largeness of the abdominal aperture are always mentioned as two causes of the difficulty or impracticability of the cure of old ruptures, yet, in fact, the latter is the effect of the former; a
thick,

thick, tough, incompressible
purse passing thro' the aperture,
and continually dragged down-
ward by a weight at its bottom,
being a constant cause of dilata-
tion.

Hence also will appear the
absurdity of all external applica-
tions, they being designed, if they
are used with any medical design
at all, either to constringe the
aperture by which the rupture
has descended, or to lessen the
diameter of the neck of the sac
so as to prevent any future de-
scend: The constriction of the
aperture is absolutely impossible
while such a wedge as an old,
tough, hernial sac remains in it,
which wedge will for ever re-
main,

E

main, as it is not returnable into the belly whence it came, from adhesion to the spermatic chord and other parts: and the diameter of the neck can be lessened by no applications, unless such could be found as could render the sac thin, soft and compressible; which from the nature of things, and from all experience, is absolutely impossible.

It is scarcely credible, how very small an opening will serve for a portion of gut or caul to insinuate themselves into at some times: and though in many persons of mature age it proves impracticable so to compress the mouth of the sac as absolutely to close

elose it, yet by the constant use
 of a well made bandage, it may
 be so lessened as to make the de-
 scent of any thing from the belly
 more difficult ; from whence we
 may learn, the great consequence
 of having the part compleatly
 returned before the application
 of a bandage, and the danger
 that may be incurred by disusing
 or laying it by after it has been
 wore some time : for whatever
 can make the descent from the
 belly less easy, must necessarily
 make the return of any part that
 may have slipped down while the
 bandage was off, more difficult,
 the consequence of which is ob-
 vious. And from hence also we
 may learn, why the bandage
 should be long and unremitting-

ly wore by such young patients as have reason to expect a perfect cure; one half of the scrotal hernias of adults proceeding from the negligent manner in which school-boys wear their trusses. With a truss properly made, and carefully wore, the meaner kind of people may be rendered fit for all the offices of life, will be capable of labour of any kind, of walking, of riding, &c. as all those find themselves to be, who are willing to do these kind of things: and with regard to very old people with very old ruptures, no confinement however long, nor any bandage however strict, is capable of producing a perfect cure: that bandage which proves retentive

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tive of the parts after they have been returned, will serve all the purposes of life, and in the circumstances of these people, an attempt by a stricter kind of bandage has more than once proved fatal.

E 3 SECT.

S E C T. II.

TO replace the portion of intestine or caul which formed the tumor, and to retain it when replaced, has been allowed to be all that the art of surgery ultimately pretends to, toward the cure of a rupture; but as there are many different circumstances attending these parts, while in the groin or scrotum, the treatment of them, in order to accomplish these two ends, must necessarily be different. These circumstances are reducible to four general heads, under which may be comprehended all the species of ruptures, with every particularity by

R U P T U R E S. 55

by which they differ from each other.

The first comprehends those which are in such a state as to be capable of immediate reduction, and are not attended by any troublesome or bad symptoms.

The second, those which have been so long in the scrotum as to have contracted adhesions and connections, by which they are rendered incapable of reduction at all.

The third, those in which such stricture is made on the prolapsed parts, as to bring on pain and trouble ; and to render

the reduction difficult as well as necessary.

The fourth, those in which reduction, by the simple operation of the hand, is impracticable, and the patient's life can be saved only by a surgical operation.

The first is most frequently the case of infants, whose ruptures have been often down before they have been taken notice of; many of them, after they have been observed, are only pressed back by the hand of the nurse, as often as they come down, or else return, *sua sponte*, upon the child being quiet or
3 laid

laid supine; not but there have been instances of bad effects from stricture even in infants.

An error which generally prevails among nurses, and has proved detrimental to many a child is, that no proper bandage can be put upon them till after they are three or four years old.

Upon this supposition they content themselves with a dimity-belt or some more foolish contrivance of their own; by which the child loses so much time, and is daily in danger of farther mischief: whereas there is no age in which a proper bandage may not be wore; and by the timely use of such, some chil-

children will have obtained a perfect cure by the time that others begin to use their bandage.

The manner of returning the parts is the same at all times; therefore I shall defer saying any thing about it here, and shall describe it once for all hereafter.

If any difficulty attends it in such young subjects, it will always be adviseable to try the effect of bleeding, and a glyster or two, before any violence is offered to the part.

Children, especially very young ones, bear the loss of blood ill; that is, they are very apt to swoon
upon

R U P T U R E S. 59

upon losing a small quantity ; and if while the child is bleeding the tumor be properly grasped, and the opportunity of the deliquium embraced, there are few that will not return during that relaxation : it is an easy experiment, can do no harm, and may prevent the pain that the necessary handling so tender a part in a young child must produce. The time of the swoon will also be attended by another advantage, viz. that of the child being quiet, and not resisting the attempt by crying,

When the contents of the hernia are returned, a proper bandage should be immediately put on and wore without remission,
care

care being taken to keep the child from being galled, by washing all the parts frequently where the truss makes any pressure, and keeping both child and bandage perfectly clean ; by which caution the truss will be very little trouble to the infant, and the perfect cure may almost certainly be depended upon. The proper make and adjustment of the truss, at this age, should be very carefully attended to by the surgeon, inasmuch as the child can make no complaint, that will inform him of its being unfit, till some injury is done.

The most frequent mischief arising from an ill made truss, in an infant, is an inflammation and
swel-

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swelling of the spermatic chord and testicle, which is not only painful in itself, but prevents the wearing the bandage till it is gone off.

Many adults also have ruptures in the same circumstances as these of infants, which give them little or no trouble, are returnable at any time by the hand, and go up when the patient lies down.

In most of these the aperture in the abdominal muscle is very large, and if they put on a truss, which is not properly made and fitted exactly, the gut will slip down behind it in some particular postures.

This

This is a circumstance well worth the attention of the person who has such sort of rupture; for though in these cases the aperture in the tendon is so large, as to leave little room to apprehend a stricture, yet pressure made by the bolster of a truss on a portion of intestine, while down in the sac, may prove of the most fatal consequence, and therefore people in these circumstances are safer without any truss at all than with a bad one, or one that will not keep the gut from coming down. This appearance of safety, from a large aperture and easy reduction, is not to be depended upon as certain, many things may happen
to

R U P T U R E S. 63

to alter this state; an inflammation of the intestine while in the scrotum, the accession of a new portion of gut and mesentery, with many other circumstances which may happen to render the return now difficult which before was easy; all which are strong and good reasons, for constantly keeping up the parts by a well made truss, the wearing which cannot possibly be so troublesome as the weight of the parts in the scrotum; to say nothing of the safety of one method, and the constant hazard of the other.

I know a gentleman who has, for some years, had an omental rupture, which being neglected
while

while he was young, having a lax habit, and the abdominal ring naturally large, makes it extremely difficult for him to keep it up with the best made truss, behind which it will sometimes slip down; when this happens, it gives him such immediate and acute pain at the bottom of his stomach, and makes him so intolerably sick, that he is obliged to throw himself upon his back immediately and procure the return of the omentum, which, from the same cause that makes its descent so easy, is easily accomplished.

S E C T.

S E C T. III.

THE ruptures comprehend-
ed under the second head,
are those which from the large-
ness of the prolapsed parts, from
the antient date of the hernia,
and from connections and adhe-
sions, are become irreducible, but
are not attended by any bad
symptoms.

Of this sort there are many,
who from a natural laxity of ha-
bit, from having the abdominal
aperture naturally large, and
from having long neglected their
complaint, have carried a large
quantity of caul or intestine, or
both, in the scrotum for a great
F length

length of time, where the intestine has executed its office without interruption, and the patients have contented themselves with wearing a suspensory or bag-truss, to support the weight.

Most of these might have been returned at first ; but, by neglect and length of time, become incapable of any other remedy than the last mentioned, the suspensory.

For the contents of the hernia, by long confinement in so narrow a space, and by little slight inflammations, contract adhesions to each other, and to the internal surface of the sac, especially in
its

its narrower part or neck, in such manner as to make reduction impracticable.

When this is the case, the only relief is a bag-truss, so made, as to render the weight of the tumor as little troublesome as possible.

People in this situation should be particularly careful not to make any attempts beyond their strength, nor aim at feats of agility, and should take care to keep the loaded scrotum out of the way of being hurt; when the tumor is very large, a soft quilted bolster should be constantly wore in the bag, under the bottom of the scrotum, and

frequently shifted to prevent excoriation which in corpulent people, and when the tumor is very large, frequently happens, and which, by being neglected, will in some habits be productive of still worse consequences. They should also take care to keep their body open, that there may be no impediment to the perfect and free execution of the office of the intestinal canal, any obstruction in which, would be very prejudicial in these circumstances.

By this means, and with these cautions, many people with irreducible ruptures have passed their time free from pain or disease on this account.

Not

Not that the quiet and inoffensive state of these old irreducible ruptures is to be absolutely depended upon; for an inflammation of that part of the intestine which is in the scrotum, and which may happen without any stricture; obstruction to the passage of the fæces from any cause; in short, whatever can disturb the proper office of the intestinal canal, may bring on mischief in this part: to which may be added, what sometimes happens, viz. the accession of a new piece of intestine, which may be strangulated, and then it becomes, to all surgical intents and purposes, a recent

hernia, and must be treated as such.

I am well aware, that among the number of those which have been thought to be in this irreducible state, and have been treated as such, there have been several, which upon more close examination and proper treatment, have been found capable of reduction.

When this is suspected to be the case, the proper method is by absolute rest for a length of time; by a supine posture, and a course of evacuants; to endeavour so to lessen the size of the prolapsed parts, as to render them

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them capable of passing back again into the belly.

This method has sometimes succeeded, but previous to the attempt, there should be some circumstance which makes success probable; and there should be also good reason to believe that the patient's habit and age will bear the necessary confinement and evacuation, otherwise he may chance to be a great loser by the exchange of his disease.

If the attempt succeeds, a proper truss must be put on immediately, and wore constantly, to prevent the parts from falling down again, which from the largeness of the tendi-

nous aperture, from the thickness and hardness of the hernial sac, and the great relaxation of the mesentery, is sometimes very difficult to accomplish, a large opening from the belly into the sac always remaining when the parts have been in this state any time.

An omental rupture, which has been gradually formed, and suffered to remain in the scrotum, is seldom attended with any bad symptoms, considered merely as a simple descent of the omentum; but by its residence in the scrotum, having always kept the mouth of the sac distended, it may thereby be the occasion of a descent of a portion

R U P T U R E S. 73

tion of intestine, and all its consequences.

The omentum become adherent, may inflame, and deposit in the sac a quantity of an acrid kind of fluid, which will give pain and trouble ; or it may suppurate in consequence of its inflammation, and will thereby make it necessary to open both scrotum and sac ; an instance of which I had an opportunity of seeing not long ago.

I was desired to look upon a gentleman from whose scrotum near a pint of stinking brown serum had been discharged two or three days before by a trocar.

The

The account he gave of himself was as follows ; that he had for some years been subject to the descent of a soft flabby kind of body into the scrotum, which he could put up again when he pleased, and which always returned when he was in bed ; being naturally shy and bashful, he had never suffered any body to see it, and was himself quite unacquainted with the nature of his disorder.

From the sudden spring of an unruly horse, he struck his scrotum against the pummel of his saddle, which gave him great pain ; the next day it swelled and became
more

R U P T U R E S. 75

more painful; still fearful of mentioning his disorder, he contented himself with daubing it over with some ointment, till at last it became so painful that he could no longer conceal it.

The person to whom he shewed it took it for an hydrocele, tapped it, and let out the quantity and sort of fluid just mentioned; in few days after this I saw it, and found the scrotum much distended, very thick, inflamed, and painful.

The orifice made by the trocar was sloughy, and seemed likely to cast off, and thereby become larger; he had a degree of heat and fever upon him, which forbade

bade any operation at that time, and therefore I desired that he might be dressed with a digestive medicine and soft poultice, lose some blood, and have a glyster.

By the application to his scrotum, and by the use of proper medicines for his febrile heat, in few days the latter was removed, and the slough on the former casting off largely, I could plainly discover the putrid sloughy omentum within; I would have laid the whole open, but was not permitted, and could only obtain leave to enlarge the present orifice about a couple of inches; in doing which, I cut through a hernial sac of great thickness and

R U P T U R E S. 77

and very hard : what part of the omentum was loose, I pulled away with my forceps, but the separation of the whole took a great deal of time, and the hard hernial sac caused so many abscesses in the integuments of the scrotum, and the discharge upon the whole was so large, that being a valetudinary kind of man, he had certainly sunk under it, had it not been for the free use of the bark.

If instead of this method of treating it, I had been permitted to have laid it open through its whole length, removed the omentum, and retrenched the hernial sac, the cure would have been much shortened, and the
scro-

scrotum would have been left in a much better state.

That an omental rupture which has so long resisted all attempts for reduction, as to produce a belief of its being irreducible, may sometimes, by long rest and abstinence, be so altered, as to become capable of return, I make no doubt, and not long ago had a man, in St. Bartholomew's-Hospital, who had a small omental hernia, which myself and many others had ineffectually tried to reduce; it was very little below his groin in the very upper part of the scrotum.

This man being confined to his bed, and a strict diet after the
ope-

R U P T U R E S. 79

operation for the radical cure of an hydrocele on the same side, got rid of both his diseases at the same time; for after he had been in bed about ten days, his omentum returned of itself into the abdomen.

In performing the operation on this man, the two sacs, viz. that of the hydrocele made by the tunica vaginalis testis, and that of the hernia formed by the peritoneum, was very apparent and satisfactory.

It sometimes happens in the case of an old descent of both gut and omentum, that the gut is returnable and the omentum not. When this is found upon
trial

trial to be so, the gut should be returned and kept up by a truss, the pad of which may be so constructed, as to keep the intestine up without pressing on the omentum, so as to do it any injury; by which means the risque of mischief from stricture of the gut will be avoided, and the patient thereby freed from a constantly impending evil.

Not long since, I saw a large portion of omentum in the scrotum, a part of which had the knotty hardness, the acute pain, and indeed every symptom of a cancer.

SECT.

S E C T. IV.

THE third division comprehends those ruptures which are reducible ; but whose reduction is difficult and attended with pain and trouble.

This difficulty of reduction may be owing to several different causes ; a large piece of omentum, a large portion of intestine and mesentery, the intestine being inflamed, loaded with fæces, or distended by flatus, smallness of the abdominal ring, &c. &c. &c. but to whatever cause the difficulty is owing, the means to be used for its relief are the same.

G

The

The hernia in this state is called an incarcerated hernia, a strangulated hernia, or a hernia with stricture, which stricture is more or less in degree in different cases; its symptoms are a swelling in the groin and upper-part of the scrotum, larger or smaller according to the quantity of contents, very painful to the touch, and renitent or resisting the impression of the fingers; the pain is increased by coughing or sneezing, or standing upright, a frequent vomiting, a suppression of all discharge per anum; to which may be added fever, with quick and hard pulse. These are the symptoms of a beginning strangulation, and consequently symp-

R U P T U R E S. 83

symptoms of impending mischief, symptoms which if not soon relieved by art, nature must submit to.

A stricture made by the borders of the aperture in the abdominal muscle on the prolapsed part or parts, is the primary and principal cause of these symptoms, and nothing can appease or remove them but what will take off that stricture; the two methods of accomplishing this end, are, removing the parts by replacing them in the belly whence they came, or dividing the stricture itself: the former is always most eligible when practicable, and is the subject of our present purpose.

A portion of intestine will, (as has been observed before) while there is no stricture above nor any inflammation below, remain perfectly quiet in the scrotum, and will there execute all its offices freely and perfectly; but the instant it becomes straitened above, the case alters: the free passage of the fæcal part of the food is interrupted or stopped, the peristaltic motion of the intestines perverted, and the circulation of the blood through the incarcerated portion so impeded, that if the impediment is not soon taken off it must stop, the consequence of which is obvious.

All

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All the symptoms of an incarcerated rupture are from these causes easily deducible and fairly to be accounted for.

The tumor, the pain, the fever, the vomiting, the tension of the belly and suppression of stools, are so many links in a chain of symptoms, all evidently and certainly produced by one cause, the removal of which only can remove them.

The manner of attempting the reduction is thus: The patient should be laid in a supine posture, with his buttocks and thighs considerably raised above his breast, when the surgeon taking up the

tumified scrotum, is to endeavour to procure the return of the prolapsed parts thro' the aperture in the muscle by gentle and repeated pressure of them towards the os ileum with one hand, while with the other he prevents their escape to the lower part of the scrotum.

This is a general description of it; but the exact and proper manner of handling the tumor, and endeavouring the return of the parts, is one of those operations, which having once done, or having seen it properly done, will convey a better and clearer idea of, than the most elaborate description; a competent knowledge of the anatomical structure and situation of the parts, will
fully

fully instruct any one how to go about it properly, and without such knowledge, though he may sometimes and by accident succeed, yet he may full as often do mischief, and his surgery will be somewhat like that of the man who replaced his companion's dislocated jaw, by giving him a smart blow in the face.

Great assistance is to be obtained in this operation from posture, by raising the hips above the trunk ; and indeed the nearer the posture approaches to that of standing upon the head (as it is called) the better, as it makes the whole packet of intestines hang, as it were, by the portion engaged in the stricture, and which will

therefore be more likely to follow.

A little time and pains spent in this manner, will frequently be attended with success, and obtain a reduction ; but if it does not, and the handling is very painful, and the patient much fatigued, it will be better to desist for few hours, take away a large quantity of blood, (as much as the strength and circumstances will admit) give a stimulating glyster or two, cover the whole tumor and scrotum with an emollient poultice, and confine the patient to bed.

This is the general doctrine and the general and most approved

proved practice, and founded on reason and experience.

The glysters will not only empty the rectum and the greatest part of the colon of what may be there, but the stimulus may perhaps do something more; and the poultice will relax the skin, and render the distension of that less painful, and therefore neither of them should ever be omitted; but the sheet anchor in this case is large bleeding frequently repeated.

Perhaps there is no disease which affects the human body, not excepting pleurisy and peripneumony, in which bleeding is more immediately serviceable than in this, and which, if there are no

very particular circumstances in the constitution to forbid it, should be done very freely and frequently, never forgetting to embrace the opportunity of a deliquium.

A warm bath or semicupium are also useful in this state, from the general relaxation which they induce.

Heister and some others, have said a great deal in commendation of glysters of the fume of tobacco, repeated frequently, which as they can do no possible harm, may be worth trying.

Many very good writers have recommended, and many able practitioners still continue to use
purg-

purging medicines, in this state of the disease, given in small doses, and frequently repeated; but I very much doubt, whether any part of the success they have had, has been deducible from these medicines. The advantage supposed is, that by accelerating the peristaltic motion the gut may be disengaged from the stricture and be drawn back into the belly. But when the stricture is so tight as to have brought on bad symptoms, I much doubt the success of the experiment.

Lenient medicines, whose form (whether solid or fluid) cannot be small, will not be retained by the stomach; and irritating medicines, whose bulk is small, are,

I think, more likely to add to the tension of the belly, already become very troublesome, than to disengage the intestine. If they do not answer that end, they can be of no service at all, and if they do no real service, 'tis much to be feared, they will do something worse than nothing.

They must increase the fulness of the small intestines above the confined portion, and consequently the tension of the belly; they must add to the irritation made against the stricture, and to the fever, and thirst, as all irritating purges do at all times and in all bodies; however, this must be left to every man's own experience and judgment.

After

After few hours rest and a large bleeding, fresh trial should be made in the same manner as the first, al-
always remembering that the less
force is used the better, and that
with regard to consequences, all
violent attempts if they do not suc-
ceed are worse than ineffectual.

Hernias are in nothing more
various than in the time which
they will safely admit for at-
tempting the reduction; some
have been successfully reduced af-
ter ten days, others have produced
fatal symptoms in twice as many
hours; this difference may arise
from difference of constitution,
habit of body, or from some par-
ticular circumstance in the hernia
itself;

itself; but let the cause of this difference be what it will, as it can never be foreseen it should never be trusted, and the sooner the reduction is made, the sooner the patient is out of danger from the stricture, and the more likely to get rid of the symptoms it has already produced.

Recent ruptures are rather more subject to stricture than old ones, inasmuch as the aperture in the muscle and the entrance of the sac in antient hernias are more patent, and less likely to bind than in recent, in which the contrary, most probably, is the case, though when old ones are attended by stricture, the symptoms are not at all lighter.

Omental

Omental hernias in general are not subject to stricture, or to any bad symptoms, though sometimes they will accidentally become very painful, and by the connection of the omentum with the stomach, will occasion a very disagreeable sensation, a nausea and vomiting; nay writers of undoubted credit have related a *passio iliaca*, in all its force and symptoms, from a mere epiplocele, without any portion of intestine.

In the case of a large omental rupture, that has been down some time, it has been recommended to be content with a bag-truss

truss to suspend the weight, tho' the portion of omentum should be returnable; upon a supposition that if returned it will lie uneasy in a lump at the bottom of the belly. This seems to me to be one of those precepts which authors have taken from each other implicitly, without sufficiently attending to the consequences which it may produce. It may be true in some particular cases, but surely is by no means fit to be established as a general rule; and it must always be worth while to try how it will lie before it be given up to such a method, as hardly deserves the name of palliative, and which may be productive of other mischief.

The

R U P T U R E S. 67

III The prolapsed parts replaced, the next consideration is how to keep them from falling down again. This can only be done by a proper bandage, so constructed, as to keep a gentle pressure against the aperture in the tendon thro' which the parts had passed, and to press the sides of the entrance of the sac as near together as possible.

The bandage now in general use for this purpose, is a truss; in the construction of, and adapting which to the part, some ingenuity is necessary; if it is not so made as to do good, it must do mischief; if it does not keep the parts up, the patient is more
H likely

likely to incur mischief with his truss on than without it; it will make a pressure on the intestine while down, which may prove very pernicious, and has often been the sole occasion of a gangrene, in cases where there has been no stricture; therefore it behoves every surgeon to see that the truss applied is well made, and does its duty, lest all his pains should be baffled by the bad construction or injudicious application of this piece of machinery.

If the symptoms of pain and inflammation, &c, ran high before the reduction, they will not always cease upon its being accomplished; and as what symptoms

RUPTURES. 99

toms remain, after the intestine is returned, arise most probably from its being inflamed, all such remedies as are proper and necessary in an inflammation of the intestine, must be proper and necessary here; but above all, the body must be kept open until all pain and tightness, and in short, till every complaint of the parts about the abdomen is absolutely removed, and the intestine performs all its offices freely and without trouble or obstruction.

H 2 SECT.

S E C T. V.

UNDER the fourth and last head are comprehended those which are in such a state, that the reduction, by the hand, is impracticable, and the patient's life can be saved only by a surgical operation.

The impossibility of reduction is owing to the same cause as the difficulty in the former section, viz. the stricture made upon the prolapsed parts by the abdominal ring, with this difference, that in the former case the reduction was practicable though difficult, in this it is absolutely impracticable.

The

The degree of stricture which renders reduction either difficult or impracticable, is productive of what are called the symptoms of an incarcerated hernia, all which arise either from the occlusion of the intestinal canal, or the stoppage of the circulation of the blood thro' the vessels of the incarcerated parts.

The symptoms were related in the former section, as far as they were attendant on that degree of the disease, and are, tumor in the groin or upper part of the scrotum, creating excessive pain in that part, and all over the belly; fever, nausea, vomiting, and suppression of all discharge

per anum; these are the first symptoms, and which, if they are not removed by the reduction of the parts, are soon exasperated, the vomiting continues, the pain and tension of the belly increase, the fever is higher, and the pulse harder, fuller, and quicker; when matters are come to this, no time is to be lost, a very little delay is of the utmost consequence, and often produces a fatal alteration.

The vomiting is exchanged for a convulsive hiccup and frequent gulping up of bilious matter, and in very little time after this, the parts within become gangrenous; the pulse now is low, languid, and interrupted; the skin cold
and

R U P T U R E S. 103

and moist, especially on the limbs; the eyes have a glassiness and languor not to be described; the part is easy, the tumor subsides, and in some cases changes its natural colour for a livid hue; but whether it changes colour or not, it has to the touch an emphysematous feel, a kind of crepitus, which will easily be conceived by any man who is acquainted with it, but is not so easily described. This crepitus is the too sure indication of gangrenous mischief within, and in this state the gut generally goes up either spontaneously, or with very little pressure, a discharge is made per anum, and the patient is much pleased at the ease he finds; but this plea-

sure is of short duration, for the hiccup and cold sweats continuing, with the addition of spasmodic rigors, and subsultus tendinum, the tragedy soon finishes.

These are the symptoms of a strangulated intestine, and this the consequence of not relieving them. The first class of them are not in themselves fatal; the latter frequently so.

The only means whereby the former can be relieved, and the latter prevented, is the operation; and when the worst symptoms are arrived, if the poor patient has any chance at all, it is still by the operation, though it is indeed a very small one; all that
can

RUPTURES. 105

can be said is, that if the gut is return'd, or returns spontaneously, in this state, death is inevitable; and there are instances of people in these circumstances who have escaped by being cut.

Perhaps there is not in the practice of surgery a more nice point to determine than the precise time beyond which we ought not to delay this operation. The time in which the contents of a hernia are damaged, that is, become gangrenous, or get into such a state as to approach that of a gangrene, is extremely uncertain, and dependent on circumstances which no man can foresee or prevent.

There

There have been several instances of strangulated ruptures attended by all the symptoms of stricture, which have been returned at the end of several days found and unhurt, or the operation becoming necessary, have been found in such state at the same length of time; and there are several instances of the gut going back, or being found, by an operator, in a state of mortification in less time than two days.

I have seen a portion of the intestine gangrenous in one day.

The direction given by writers on this subject is hardly to be trust-

trusted ; the symptoms which are generally mentioned by them as indications that the time for the operation is come, are most frequently signs that the proper time is just elapsed.

On the other hand, to propose an operation of so much consequence, as this is thought to be, before it shall appear absolutely necessary, may be censured ; nor do I know any situation in which a judicious and prudent man can be put, in which it will behove him to be more wary and circumspect. There are two circumstances in this case, which though really of some weight, have been perhaps too much regarded,

One

One is an apprehension of much danger from the operation, considered simply and abstractedly; and the other is a fear of bringing disgrace on it, by performing it after it is thought too late, or in the words of Celsus, *ne occidisse nisi servasset videretur*.

That the operation considered abstractedly, is not void of danger, every man who knows any thing of the nature of wounds of tendinous and membranous parts must allow, these being frequently attended by fever and inflammation, and being slow and difficult of digestion; but still I am from experience inclined to think this fear much too great. This

This dread is the reason why we do not know for certain what trouble or hazard would attend the operation, considered simply; for it produces a delay, by which all the circumstances of danger are increased, and which the most judicious man can neither guard against nor prevent: nor do I see any method whereby we can be informed of the point in question, but by performing the operation sooner than it is generally performed: I mean very soon after bad symptoms have made their appearance; for although, upon a division the parts are not found gangrenous, yet that is no sort of proof that
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whatever happens afterwards is to be set to the account of the operation ; that degree of inflammation of the intestine which is just on this side becoming gangrenous, is surely no state of safety ; nor is the same state of the hernial sac a desirable circumstance, since in this case we are far from being sure that taking off the stricture will remove the symptoms or the hazard ; the contrary is much to be feared : and thus the risque of the operation becomes complicated with that arising from the state of the parts within ; a state of disease, and generally brought on by delay and fear of the operation.

'I am sensible that I differ from many practitioners, for whose judgment I have great regard, and I should be sorry to be thought too partial to my own opinion; but yet I cannot help saying, that I have taken a good deal of pains to attend to all opportunities that have offered themselves to me in this disease; that I have performed the operation many times in all its states, and can venture to affirm that when it has been performed in time, it has always been successful, and that I do not recollect to have lost one whose death could fairly be attributed to the operation, the very precise time for doing which is so extremely difficult to fix, and the perform-
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ing which too soon cannot possibly be attended with the hazard that performing tho' ever so little too late must be. To which I will venture to add, that when the inflammation of the gut is very great, the fever high, the tumor full, and the scrotum upon the stretch, I verily believe, and am convinced that the necessary handling the parts in attempting reduction in such state, is nearly, if not full, equal both in pain and hazard to the operation.

I must desire in this place not to be misunderstood, as if I would advise the operation to be performed before proper attempts for reducing the parts had been made, or before the symptoms of stricture became pressing ;

R U P T U R E S. 113

sing ; much less that I would recommend it as a means of producing a radical cure of a rupture, not attended with stricture, a thing much advised by pretenders, but not to be thought of by any man who has either sense or humanity.

The only intent of the operation should be to preserve life, by removing the hazard of mortification arising from the stricture ; and tho' I have pressed the timely performance of it in such circumstances and with such view, and think the hazard from the operation much less than that from the stricture, yet I should be very sorry to have it thought that

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I encouraged the performance of it wantonly or unnecessarily.

And with regard to its use, as a means to obtain a perfect cure, or prevent the necessity of wearing a truss, every man who knows any thing of the matter, knows that it very often fails in producing that end. That some of those who have necessarily submitted to the operation, to preserve their life, have been obliged to wear a truss afterward to prevent the intestine from slipping down behind the cicatrix into the groin; and that the operation is by much too painful and too hazardous to be proposed or undertaken

R U P T U R E S. 115

taken (with this view) by any man who has the least regard either for his own character or his patient's safety, or, in short, for any thing but money.

When the operation shall be thought necessary, the manner of performing it is this :

The pubis and groin must be shaved clean, and the patient laid upon a table of convenient height, on his back, with his legs hanging easily over the end of it, then with a straight dissecting knife an incision must be made thro' the skin and membrana adiposa, beginning just above the ring of the abdominal muscle, and continuing quite down to the infe-

rior part of the scrotum; upon the division of the membrana adiposa some small tendinous bands appear distinct from each other, lying close upon the surface of the hernial sac, which is next to be divided; the same knife with which the first incision was made will be the best to make this also: here some caution and a steady hand are necessary, the sac being in some cases much thinner than in others, and consequently more easily cut through.

The incision in the sac is best made about an inch and half or two inches below the stricture, and need be no more than such an aperture as will just admit the extremity

R U P T U R E S. 117

tremity of the fore finger, which considering the great dilatibility of these membranes, will be a very small one; the fore-finger introduced into this aperture is the best of all directors, and upon that finger a narrow bladed, curved knife, with a bold probe-point, will be the only instrument necessary to finish the operation with.

With this knife on the finger, the sac should be divided quite up to the ring, and down to the bottom of the scrotum.

Upon the first division of the hernial sac, a fluid is discharged of different quantity, color, and consistence, according to

the different age, and circumstances of the hernia, limpid if the rupture be recent, brown or bloody if antient.

This fluid has been mentioned by some as a defence against any accident from the knife in the first division of the sac, as if it kept the sac at such distance from the gut as thereby to lessen the hazard ; but this is a very fallacious circumstance, and not to be trusted to : in the division of the sac all the security is a small opening, made by a steady hand, and directed by an attentive eye.

Many different instruments have, by different people, been devised and constructed for this
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R U P T U R E S. 119

operation, the bistouri cache, the bistouri herniare, the winged director, blunt pointed scissars, &c. all which are calculated for the defence and preservation of the intestine in dividing the sac and ring; but whoever will make use of the two knives just mentioned, will find that he will stand in need of no other instruments, and that he will be able to perform the operation with more facility to himself, with more apparent dexterity, and with less risque to his patient with these than with any other.

The sac being fairly divided up to the ring, if the hernia is of the intestine (the only one which can require this operation)

ration) it pushes out immediately, and appears to be much more in quantity than it seemed while confined in the scrotum.

This is the time to try whether, by gently pulling out a little more of the intestine, the bulk cannot be so lessened as to be capable of passing through the ring without dividing it; if the portion of gut be small, it is more likely than if large, the difficulty of returning a large one in this, as well as in the taxis, depending a great deal on that part of the mesentery which comes down with a large portion of gut, and which is engaged in the stricture: if this does not succeed, the probe-pointed knife, conducted
on

R U P T U R E S. 121

on the fore-finger, will immediately divide the upper part or border of the aperture in the tendon and set all free. It is generally advised to make this incision in the tendon freely, as well to give room to return the part without much handling, as to avoid any inconveniences which may arise from a small division of a tendinous body ; the advice, is good, with certain limitation, but it should also be remembered, that the incision may be so large as to be productive of great inconvenience.

The spermatic chord and epigastric artery, which some writers have cautioned an operator against injuring, are sufficiently out of the
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the way of being hurt in their general disposition, and the *lufus naturæ* no man can guard against, but must act according to the present exigence.

It has by some theory-writers been advised to divide the ring only, and to endeavour to return the hernia in its sac without opening it, from a supposition of mischief being producible by the influence of the air on the intestine; but there are many objections to this, supposing it practicable, (which from the adhesion of the hernial sac to the spermatic chord can seldom if ever be the case): it would prevent all knowledge of the state of the included parts; it must
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R U P T U R E S. 123

return into the belly all the liquor contained in the sac, which can serve no good purpose; and it may possibly prove no alleviation of the symptoms.

The sac and ring divided, the contained parts come next in view.

These, according to the different circumstances of the hernia, must be in different states, and require different treatment.

S E C T.

S E C T. VI.

THEY will be found in a sound and healthy state, capable of and fit for immediate reduction ;

In a sound state, but (from some particular circumstances) incapable of immediate reduction ;

Or, in an unsound diseased state, and requiring to be treated accordingly.

If the hernia consisted of intestine only, and that neither discoloured nor adherent, the sooner it is returned the better, and the more gentle the handling, in order to reduction, the better also.

If the intestine is accompanied by a portion of the omentum, the omentum should be returned first.

In making the reduction, the part last protruded should be first returned; which is best done by pressing it gently and alternately with the fore-fingers, applying them rather to that part of the intestine which is connected with the mesentery, than to the convex part.

In this reduction great assistance is to be had from posture; the higher the buttocks are raised above the thorax the better, as the intestines within the cavity will

will more attract that part which is without, and thereby facilitate its reduction.

If the omentum appears found, it should be all returned immediately, let the quantity be what it may, and with as little injury from handling as possible.

The confinement in the scrotum will, in some habits, in a very short space of time produce slight adhesions by slender filaments, which are easily separated by the finger or snipt by the scissors, whether the adhesion be of the parts of the intestine inter se, or to the sac; if the adhesion be of the former kind, and not easily separable, it is better to

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return it without attempting separation, which may be attended by inflammation if nothing worse.

If the portion of omentum be small in quantity, and so very adherent that the operator does not care to divide it, it may very safely be left; part of it will melt down with the suppuration of the parts, and the rest will shrink so as not to hinder the healing of the sore, or be at all troublesome after it is healed.

But if the quantity of omentum be so large and so adherent as not to be easily separable, all that is below the adhesion may very safely be retrenched in a man-

manner to be described hereafter.

The prolapsed parts being returned, the next consideration is the hernial sac; which, if large and hard, will prove very slow and difficult of digestion, and much retard the time of healing, by producing abscesses in the scrotum, and thick, hard, and very painful lips and edges to the fore.

The greatest part of this sac may be retrenched very safely and to great advantage, no part of it being of any consequence except the posterior, which is connected with the spermatic chord; all the rest of it which is
loosely

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loosely connected with membranes of the scrotum is very easily separable, and much better removed than left.

It has been proposed to pass a ligature round the mouth of the sac, after the parts have been returned, to prevent any relapse, by procuring an union of the sides of the sac with each other; but to this there are many material objections.

It would prevent the exit of the discharge, which for some days after the operation always flows from the belly.

It would be very likely to injure the spermatic chord, if
K included

included within it ; and if it be tied at all tight, it would be productive of mischief below in the scrotum, which might be of great consequence.

The next state is that of the parts being so adherent, as not to be capable of being returned. In this case it is advised to remove the stricture by dividing the sac and ring, and to leave the prolapsed parts in the scrotum as you find them.

I have mentioned this because it stands in all books on this subject, even the latest, and all agree in this method of treating it. It is a case I have never seen, nor do I suppose it can happen

R U P T U R E S. 131

pen very frequently in the manner it is related.

I have seen the intestines very adherent to each other, and to the hernial sac, but never in such a state of adhesion as to be inseparable and consequently unfit for being replaced.

The adhesion of the parts of the intestine inter se, are frequently separable; but if they are not, it is allowed these adhesions are no hindrance to the intestine being returned; and the omentum, if very adherent, may safely be retrenched; so that the adhesion here meant must be that of the intestine to the sac: of these two parts we are interested

only in the preservation of one, and may make a little free with the other; and though the separation may be tedious and painful, yet if it can be accomplished, surely it must be much preferable to leaving a quantity of intestine loose in the scrotum, which, from the removal of the stricture above, will be liable to be increased in quantity by every unguarded motion, and subject to all the inconveniences which the influence of the air must necessarily produce on such tender parts; not to mention the great difficulty of managing the fore in this state, and the pain and other bad symptoms that must arise upon the daily uncovering the intestine, so great, that I
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R U P T U R E S. 133

cannot help thinking any fatigue or pain, which may attend the separation, is to be submitted to, rather than leave a man in such a state as hardly deserves to be called life, and must make his existence painful and disagreeable, supposing the method of treatment to be practicable, which I must acknowledge I have no idea of as it is described by writers. For to leave the parts as they were found, and as it is advised, is impossible ; they are found contained in the hernial sac and scrotum, defended from the air, and limited, as to quantity, by the stricture above ; the necessary operation has removed that stricture, divided the sac and scrotum, and set all loose and free, and the

intestine must either be returned after freeing it from its connections, or an anus must be formed in the groin, and then it becomes another case.

SECT.

S E C T. VII.

HITHERTO the parts composing a hernia have been considered as displaced; as inflamed; as having contracted unnatural connections and adhesion, &c. but still so unhurt by the stricture, as to remain sound and within the laws of the circulation, fit to be returned into the belly again, in the same state in which they were found, and affording a good prospect of success in the event.

But if the removal of the stricture has been too long deferred, or if the inflammation ran so high as not to give way to the

proper treatment, the parts engaged in the stricture will become diseased and unfit for reduction.

The disease here meant, is that of gangrene or mortification, produced by the stoppage of the circulation of the blood through the incarcerated parts; This gangrenous or mortified state of the parts will be more or less in degree and extent in different cases and in different circumstances; but however different these may be, one general rule must be invariably observed, viz. that no altered or mortified part, however small the extent of the alteration may be, should ever be returned loose into the belly,

belly, the consequence being almost certainly fatal.

If the omentum be down, and so much altered as to require removal, the sooner it is done the better.

The antient and indeed the the general method of doing this is by making a ligature on the omentum just above the altered part, cutting it off just below the ligature, and returning the upper part into the belly with the ligature hanging out from the wound, to be taken away when cast off.

This method was calculated to prevent the hazard which might

might arise from a hemorrhage of the vessels of the omentum when in the belly ; but these vessels are so very inconsiderable as to leave no room for such fear, and in some circumstances there is a material objection to the ligature, which is, that if the piece of omentum be pretty large and the ligature made high, it may, when returned, prevent the colon from taking its proper situation, and consequently from lying easy, which might be the occasion of farther disorder.

The best manner of retrenching it is by a pair of scissars, after it has been carefully expanded, as well on account of its more easy division, as to avoid
in-

injuring any small portion of intestine which may be enveloped in it; if it be cut off just below the termination of the mortified part, there can be no fear of bleeding; nor can any objection lie against this method of leaving a very small portion of the altered part but what must hold against the ligature, as much being to be cast off in one case as in the other, and the wound, below in the groin, being necessarily open a time sufficient for the discharge of any thing from the abdomen.

If a gangrene of the intestine consists only of a spot, which by casting off may endanger the shedding its contents loose into the belly, that inconvenience is

to be avoided by connecting the intestine to the upper part of the wound with a needle and ligature, by which means it may contract such adhesion as to discharge the fæces at the wound for some time ; after which it has been known to contract gradually, and heal firmly : but whether the event proves so lucky or not, this method of securing it should never be omitted, as the shedding the contents of the intestines into the belly, must at all events be wrong, and securing the gut by this means to the wound can be attended by no inconvenience.

If

If the altered portion be of such extent as to require excision, but yet is not so large as to prevent the extremities of the divided gut from being brought into contact with each other, their reunion must be endeavoured by future; in making which the ends of the gut must be made to lie a little over each other by introducing one a little way within the other, by which means the future will be strengthened, and the future union become firmer; and when the two ends are thus sewed together, they must both be fastened to the inside of the belly, at the upper part of the wound, with a needle and ligature, that in case the union does not take place,
the

the discharge of fæces may be derived thro' the wound.

But if the gangrene is of such extent as to prohibit the bringing the portions of the divided gut into contact with each other, the method must be different.

As in this case it is impossible to preserve the continuity of the intestinal canal, the aim of the surgeon is to prevent the contents of the guts being shed into the belly, and to derive out by the wound in the groin all that which should pass off by the rectum and anus.

To accomplish this he must take care that, in removing the
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R U P T U R E S. 143

mortified parts, neither end of the intestine slip from him, which might occasion him a good deal of trouble.

Then with a proper needle and strong ligature each of their ends is to be fastened to the inside of the belly near the upper part of the wound; the suture by which this connection is made should not be too slight, lest it cast off too soon before the extremity of the gut has contracted an adhesion to the side of the wound; and the stitch must also be made in the gut in such manner as to preserve, as perfectly as may be, the free passage of its canal, upon which all future hope depends.

The

The dressing to the external wound should be as soft and as easy as possible, the patient should observe the most rigid severity in the affair of diet, and the most perfect quietude both of body and mind; and with regard to medicine, whatever is exhibited in the first stage must tend to procure rest and ease, to quiet the febrile heat, and keep the body soluble; and if things should happen to take a favourable turn, the sloughs cast off, the tension of the belly subside, and the fæces discharge freely at the wound; the Peruvian bark (managed in such manner as neither to restrain the fæcal discharge or prove purgative) may be given to great advantage.

vantage. All the rest must be left to nature, who is by her Great Creator furnished with such powers as sometimes to produce very happy events, even in these deplorable cases.

This is the substance of the best practice, and of the most approved doctrine upon this subject; and has been sometimes attended with success; but the practitioner, who is so circumstanced as not to see much of business, should be apprised how very little reason there is to hope for or promise it.

More censure is incurred by an unguarded prognostic of success if defeated, than by a successful

L event

event if properly and prudently foretold; and if a man was to form his judgment of this and some other diseases from books only, he would expect very little of that trouble and disappointment which he will most certainly meet with in practice.

Observation-writers, who are in general too much addicted to tell their successes only, are fond of relating gangrenous cases from which large portions of intestines have been removed, the proper operations perform'd with great dexterity, and the cases brought to a happy issue; and of these they all give us instances, either from practice, from books, or perhaps sometimes from imagination; by
which

which the young reader is made too sanguine in his expectations. That these extraordinary successes have sometimes happened, is beyond all doubt, and it is every man's duty to endeavour at the same, when such cases occur to him; but the inexperienced practitioner should also be informed how many sink for one that is recovered, and how many lucky circumstances must concur, with all his pains, to produce a happy event, in these deplorable cases; without this caution he will meet with very irksome disappointments, and having been often baffled where he thought he had reason to expect success, will sometimes meet with it so very unexpectedly, that he will be in-

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clined

clined to think the sarcastical distinction between cures and escapes not ill founded.

To say the truth, the hazard in these cases is so very great, and the utmost power of art so very little, that what Japis said to Æneas may with great propriety be said here.

Non hæc humanis opibus, non arte magistra

Proveniunt: neque te Ænea, mea dextera servat:

Major agit DEUS.

SECT.

S E C T. VIII.

RUPTURES THROUGH THE ABDOMINAL RINGS OF FEMALES.

ARE subject to the same symptoms, and require the same treatment as the inguinal ruptures of males, and like them frequently admit of perfect cure, if not mismanaged or neglected: the same kind of truss is also necessary here, with the same cautions in regard to its application and the manner of wearing it.

When not reducible by the hand, and attended with such symptoms as require the operation, it must be performed in the

L 3 same

same manner and with the same instruments as in the bubonocoele in men; remembering that as the hernial sac is in this case seldom so thick as in the scrotal rupture of males, more caution and circumspection are necessary in dividing it.

After the operation is performed, and the parts returned, it has been proposed to pass a ligature round the neck of the sac, and by that means endeavour to prevent the future descent of any part from the belly. Against which it is objected, that by this means the necessary discharge which is always made from the abdomen for some days after the operation, would be prevented.

Whe-

Whether the future advantage arising from the ligature is sufficient to ballance any inconvenience from retaining this discharge ; or whether this discharge, being freely made, is not of too much consequence to run the risque of stopping it for any prospect of future advantage ; I will not take upon me absolutely to determine : but if any man has a mind to make the experiment, he must carefully attend to the appearance of the fore and parts adjacent, and if any pain, inflammation, or tension, either of the wound or belly, come on, the part must be immediately set free by dividing the ligature, and

an opening made, and preserved, for this discharge, till all these symptoms are quite gone off.

SECT.

S E C T. IX.

H E R N I A F E M O R A L I S O F C R U R A L
R U P T U R E.

THE crural or femoral rupture receives its name from its situation, the tumor occasioned by it being in the upper and fore-part of the thigh. To understand rightly the nature and situation of a crural hernia, it is necessary to recur to the anatomical structure of the tendon of the obliquus descendens muscle of the abdomen, and what is called the ligamentum Poupartii, with the parts immediately adjacent.

The

The lower part or border of this tendon is not form'd into an edge as appears in most dissections and most plates ; but having constituted that tendinous production which runs from the anterior part of the spine of the os ileum to the symphysis of the pubis under the name of Fallopius or Poupart's ligament, sends off a fine tendinous expansion which is lost in the fascia of the muscles of the thigh ; under this expansion lies a quantity of membrana cellularis, some fat, and the inguinal glands ; these together occlude that passage, which, by the excavation of the bone, is left under the ligament into the cavity of the belly. So that
what

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what is called the ligamentum Poupartii, is really the lower border or edge of the tendon of the oblique muscle ; and the passage under it, into the belly, is stopt merely by fat and glands.

Under this ligament or tendon, the hernia in its sac passes, and makes a tumor on the fore and upper part of the thigh. It is generally described as passing over the great crural artery and vein, which are said to be immediately behind it ; but whoever will examine the state of these parts in a dead subject, will be convinced that this is not the case : the sac lies to one side of the vessels nearer to the pubis ; the vessels nearer to the os
3
ileum ;

ileum; and the sac, if not very large, rests immediately upon the bone.

This species of rupture women are rather more subject to than men, as the rings in their abdominal muscles are much smaller than those of men; but then it is not so subject to stricture, there being a large space on each side for the hernia to expand itself in.

The general symptoms are the same as in the inguinal hernia, and therefore need not be here repeated; the treatment and reduction are also the same, with only this difference, that in the inguinal, the contents are to be pressed

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pressed toward the os ileum, in this they are to be pressed toward the linea alba or navel.

When not reducible by the simple operation of the hand, it, like the other, becomes the object of a surgical operation; by which the hernial sac is laid open, the stricture taken off, and the parts returned.

In performing this, the same instruments are required as in the other; the incision through the skin and membrana adiposa is to be made along the upper part of the tumor, through its whole length; upon dividing these, the tendinous fascia or expansion comes immediately
in

in view, stretched over the hernial sac; these must both be carefully divided in the same manner as in the other case; and as there is a large space under the border of the tendon, between the pubis and ileum, which allows much room to manage the reduction, it is always worth while to endeavour at it without dividing the ligament; for it is not here quite so safe a matter as in the other case: here are two parts to be avoided, both which lie very little out of the way of the knife; these are the spermatic chord, and the epigastric artery; whose situation are such as to render them very liable to be divided: if the ligament be cut directly up, as the tendon is in the inguinal

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nal hernia, the chord will certainly be divided; and if, to avoid that, the knife be carried more toward the ileum, the epigastric artery will be in great danger; and make your incision in what part you please of the ligament, if it is made to any length, the risque will be the same, as will appear to any who will examine these parts in situ naturali, and make a proper allowance for the pressure and distension of the hernial sac.

The only way to avoid injuring both, is to make the incision small, which will be sufficient here, if necessary at all.

Of

Of the two, the spermatic chord is certainly the most to be regarded; and if the epigastric artery should happen to be wounded, it must be taken up by needle and ligature; but in some cases this may not prove so easy a matter to execute as to describe.

The epigastric artery is, in many people, near as large as the smaller carpal; departs immediately from the trunk of the crural artery; its origin lies in a bed of soft fat and membranes; the stream of blood would be very brisk, and the passage of the needle round it, might prove troublesome as well as hazardous, on account of the vicinity

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cinity of the crural vessels; for if the epigastric artery is divided in this operation, the lower part, or that next the crural, is what must be taken up first. This may undoubtedly be very happily executed, if necessary; but as it must be attended with much trouble and some risque, it is better to avoid it if possible, which may generally be done by making the division of the tendon small, and keeping the probe-point of the knife against the end of the fore-finger held up tight just behind the side or border of the ligament. In most other circumstances, this hernia is so similar to the inguinal and scrotal, as to need no particular description.

M S E C T.

S E C T. X.

THE parts composing an hernia being replaced in the belly, while sound and unhurt, either by inflammation or gangrene, it had always been thought that the surgeon had done all in his power at this time; and that if a proper bandage was immediately applied to keep the parts from falling down again, the patient had nothing to fear.

This has always been supposed, and generally been found to be true; all the best practitioners have acted upon this supposition, and have regarded a hernia reduced

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duced in these circumstances no farther than to use all proper caution to prevent a new descent.

But within these few years it is said to have been discovered that it is possible for a hernial sac to be absolutely loose and free from all connection with the tunica vaginalis and spermatic chord: that this sac may be returned into the belly while a portion of intestine, included within it, is strangulated by a stricture made on it by its neck or entrance.

This straightness of the neck of the sac is supposed to be produced by the pressure of the bol-

ster of a truss, worn to keep the parts from descending.

The pressure of a truss will undoubtedly produce such straightness, if the hernial sac be not very tough; and the more such straightness is produced, the nearer the cure comes to being radical.

The only doubt arising upon this representation is, that the hernial sac is, in general, found to be so connected with the tunica and chord, as to be absolutely incapable of such return.

That the straightness of the neck of the sac does sometimes
make

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make a part of the stricture, is beyond all doubt : This happens most frequently in old ruptures, for which a truss has been long wore : but then the same circumstance of antiquity is generally found to be productive of such adhesion of the sac to the tunic and chord, as to render the return of it into the abdomen very highly improbable.

Mr. Le Dran has given a history or two of this case. In one, the hernia, after having given some trouble, was returned by the hand perfectly and compleatly ; but all the symptoms of stricture continuing, the patient died.

‘ Upon opening the body, he
 ‘ says, he found a large portion of
 ‘ intestine included in the hernial
 ‘ sac, which was returned into
 ‘ the belly intire : That the stric-
 ‘ ture made by the neck of the
 ‘ sac was such, that he could
 ‘ not with all his force disen-
 ‘ gage the intestine, and was
 ‘ obliged to divide the sac to
 ‘ get a view of the gut,’

There can be no doubt that
 Mr. Le Dran found the case as he
 has represented it ; it must there-
 fore be looked on as possible ;
 but very happily for mankind,
 as well as the surgeons, it can-
 not be very frequent. It is a
 cir-

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circumstance which can neither be foreseen nor prevented ; and therefore would add considerably to the difficulty and danger of ruptures.

It is said, that by very carefully attending to the manner in which the intestine returns, we may distinguish whether this happens or not ; that if the sac returns with the gut included, a hard body will be perceived to pass under the finger ; and that the intestine, in its passage through the abdominal ring, will not make that guggling noise it usually is found to make. These, instead of being characteristical marks of the return of the sac, will almost always be found

M 4 where

where a portion of omentum, that has been much compressed, ascends at the same time with the gut; and therefore however ingenious this may seem, considered theoretically, it will prove very fallacious in practice.

But suppose these marks were clear and distinguishable, (which I am far from allowing) I do not see how we are to avail ourselves of this knowledge, or what benefit will be derived from it to our practice.

The intestine must be returned before we can have this information; and if instead of these very doubtful marks we had the clearest proofs that this was the
2 case,

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case, we have no remedy, but a very perplexing, tedious, and painful operation; which I believe, as few surgeons would choose to perform (in such uncertain circumstances) as patients submit to.

I call these marks doubtful, because we have no certain indication, that the continuance of the symptoms after reduction are owing to this accident. They may much more probably be owing to that degree of inflammation under which the intestine laboured from being too long confined in the stricture, and which no surgical operation can relieve.

This

This appears to me to be the state of the case, as far as it regards the operation of the taxis or reduction by the hand merely. And,

When the operation by the knife is necessary, it can be of little or no consequence.

It is said, that till this was known, the stricture, from the abdominal ring and adhesion of the contents to the sac, were supposed to be the only hindrances to a return of the gut. And that when such a case occurred, if the tendinous rings only were dilated, and the sac not opened; the patient might be lost, not-
with-

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withstanding the operation had been performed.

But every operator is now so perfectly satisfied of the great impropriety of not dividing the sac (to say nothing of the general impossibility of returning it entire) that no inconvenience can arise from hence.

One very useful piece of knowledge may however be enforced from these considerations, viz, That of making a pretty free division of the upper part of the sac and of the ring in the operation, and passing the finger up within the abdomen all round, to examine if there are any strictures

tures or adhesions remaining, which will admit of being freed.

M. La Peyronie has related an extraordinary case of an entero-epiplocele, in which all the symptoms continued after a successful reduction of the parts by the hand. Upon dissection it appeared that a portion of the omentum had, in its return, so entangled the intestine as to cause the death of the patient.

SECT.

SECT. XI.

ATTEMPTS TOWARD A RADICAL
CURE.

IN the first section of this treatise I have said, that the means used to produce a radical cure, were exactly the same as those used to produce a palliative one, viz. reduction and bandage ; and that the event was dependent on circumstances which a surgeon can neither alter nor direct ; such as the age of the patient, the date of the rupture, the thickness of the hernial sac, the size of the abdominal rings, &c.

Those

Those who are acquainted with the history of this disease, may possibly be surprized at this assertion, when so many different methods have been proposed for obtaining a radical cure, and such success has been said to have attended some of them.

If any of these means deserved the character that has been given of them, or had proved generally successful, I should certainly have spoke of them in their proper place.

But all these different methods, however applauded by a few individuals, have upon repeated experiment been found
to

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to be unfit for practice: they have, in general, proved mischievous and inefficacious; the majority of those who have submitted to them, have remained uncured of their rupture; many have been mutilated, and some absolutely destroyed.

These were my reasons for not describing them in the first section, and thereby breaking the thread of my purpose; and for referring them to be spoke of all together in this place.

They all have the sanction of antiquity; have been described or practised by several of the antient surgical writers; and are all calculated for the same purpose,

pose, viz. to destroy the skin and common cellular membrane about the abdominal rings, a part of the tunica vaginalis and hernial sac, and thereby to procure so firm an union of the parts inter se, or such an attachment of them to the bone, as to prevent the descent of any thing (but especially the intestine) from the belly into the groin or scrotum.

This is the ultimate intention of them all; but the means whereby it is proposed to accomplish this end are different.

The principal, or those most worth notice are, the cure by cautery; by caustic; by castration;

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tion; the punctum aureum; the royal stitch or future; and the cure by incision.

The method by cautery is mentioned by Avicenna, Albucasis, Paulus Aegineta, Fab. ab Aquapendente, Guido de Cauliaco, Severinus, Theodoric, Rolandus, Lanfranc, serjeant Wiseman, and others, and is to be performed as follows :

The intestines being emptied by fasting and purging, the patient is to stand upright, and by coughing, straining, or any other means, to make the gut protrude in the groin; and the circumference of this protrusion is to be marked with ink : then

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the

the patient being laid on his back; and the portion of intestine returned into the belly, a red hot cautery is to be applied according to the extent of the line marked out by the ink: for this purpose cauteries of very different shapes have been proposed, triangular, elliptical, circular, and in the form of the Greek letter gamma; which difference of form in the cautery can be of little or no consequence, (if the size be proper) either with regard to the fore or the intended cure.

The writers who have described this method, have differed from each other with regard to the depth which the cautery is
to

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to penetrate : by some it is ordered to be carried down to the os pubis, the periosteum covering which is to be destroyed and the bone so laid bare, as to make an exfoliation necessary. By others it is directed to destroy only the skin and membrana adiposa with the iron, and to go through the membranes to the bone with escharotic medicines.

The exfoliation of the bone is by both made a necessary part of the process, a *causa sine qua non* of the cure. Albucasis says, ' Et scias quod quando tu non consequeris os cum cauterio non confert operatio tua ;' Rolandus orders the application of the

cautery in the same manner; so do Guido, Theodoric, &c.

Brunus says, 'Si non fueris
'os consecutus in prima vice,
'tunc itera cauterium vice alia
'donec consequaris; quia si non
'consecutus fuerit os cum cau-
'terio parum confert operatio
'tua.'

The eschar and sloughs being separated, and the exfoliation cast off from the bone, the sore is to be incarned as firmly as possible; the patient is to observe an extremely strict regimen; is to lie on his back during the cure; and to wear a bandage forty days after, to prevent a new descent.

The

The cure by caustic is described by many, and among the rest by Guido de Cauliaco, Severinus, Lanfranc, Theodoric, Parey, Scultetus, &c.

The patient being laid on his back, and the hernia returned, a piece of caustic is to be applied on the skin covering the ring of the abdominal muscle. This caustic is to be so large as to produce an eschar the size of half a crown. By the repeated application of escharotic medicines, the skin and membrana adiposa are to be destroyed, and as much of the tunica vaginalis, and hernial sac (if down) as can be done

cautery in the same manner; so do Guido, Theodoric, &c.

Brunus says, 'Si non fueris
'os consecutus in prima vice,
'tunc iterum cauterium vice alia
'donec consequaris; quia si non
'consecutus fuerit os cum cau-
'terio parum confert operatio
'tua.'

The eschar and sloughs being separated, and the exfoliation cast off from the bone, the sore is to be incarnated as firmly as possible; the patient is to observe an extremely strict regimen; is to lie on his back during the cure; and to wear a bandage forty days after, to prevent a new descent.

The

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without injuring the spermatic vessels.

For this purpose different kinds of corrosive applications have been used. Pastes loaded with sublimite; arsenical medicines; the stirpes brassica burnt; the tithymallus; the lapis infernalis alone, or with suet and opium; oil of vitriol; with many others according to the whim of the operator, but all designed for the same purpose, viz. to destroy the common membrane and part of the tunica vaginalis, so as to procure an union of these parts, and produce such a cicatrix as shall resist any future descent.

The

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The mere relation of two of these methods is sufficient to shock any ingenious or humane man.

The horror of the cautery must be very great; the apprehension from the caustic will indeed be less, but the pain full as great, and of much longer duration.

The parts to be destroyed, are the skin, the membrana adiposa, part of the tunica vaginalis, a portion of the hernial sac, and the periosteum covering part of the os pubis; and this is to be done without injuring the spermatic vessels, or the tendon of the abdominal muscle.

Whether this be attempted by actual or potential fire, by cautery or caustic, the precise limits of the effect of either will be out of the power of the operator to determine, and consequently some parts will frequently be injured which were not intended, nor ought to be hurt.

If the spermatic vessels are hurt, an inflamed or diseased testicle will be the consequence; if they are destroyed the testicle will be rendered useless; if the tendon of the abdominal muscle is injured either by the iron or the salts of the caustic, terrible sloughs, a large ill-natured painful sore, and a high symptomatic fever must be expected; which

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in some habits must be productive of much mischief; to say nothing of the consequence of destroying this part of the tendon, and of the necessary confinement which such a sore so circumstanced must occasion.

That the evils attending these methods are not ideal, and the suggestions of my own imagination and prejudice, the writers themselves who propose them may testify.

Guido, speaking of the caustic cure says, 'In quo summe cavendum est quod homo dominus sit de corrosivo; si indocte applicatur febris commovet et accidentia mala.'

That

That great pain, defluxion on the hæmorrhoidal vessels, inflammation and tumor of the scrotum, were the frequent consequence of these attempts, may be learned from the same author, who directs the repetition of the caustic applications thus; ‘Et ita
 ‘continue fiat, quo usque caro mi-
 ‘racis tota sit corrupta usque ad
 ‘didymum, quod cognoscitur per
 ‘inflationem bursæ testiculorum,
 ‘et per dolorem partium poste-
 ‘riorum.’ And as a proof that the caustic has penetrated deep enough says, ‘Quod cognoscetur
 ‘per majorem tumorem testiculi;
 ‘et per majorem dolorem dorsi et
 ‘partium posteriorum.’

The

The consequence of such pain and such defluxions on these parts is too obvious to every practitioner to need pointing out, and indeed the precautions taken by the same writers to guard against and remedy these inconveniences, sufficiently prove their great probability : hence the directions for anodynes ; emollient poultices ; embrocations, for the letting out matter, stopping hæmorrhages, &c.

Brunus says, ‘ Et cave summa
‘ diligentia ne in hora cauteriza-
‘ tionis exeat intestinum et com-
‘ buratur.’

Lan-

Lanfranc, after having described a mixed method, very operose and painful, which he calls his own, adds, ‘ Omnes
‘ autem alii modi sunt fallaces,
‘ quia aliquando post multos labores iterum crepati remanent,
‘ aut sunt valde periculosi; et
‘ super omnes modos peior est
‘ ille qui fit cum caustica medicina: nam medicina caustica
‘ propter ejus magnam malitiam
‘ et venenositatem dolores multos
‘ facit, qui sunt causa attrahendi
‘ apostema; et raro fit quin per
‘ ea apostema maximum generatur; et quod pejus est, adeo
‘ per eam inflatur didymus et
‘ contrahitur quod aliquando
‘ per vulnusexit;’ and, from what follows,

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follows, it is plain that fatal convulsions were no infrequent consequence, ‘ Et sic multi spasman-
 ‘ tur et spasmati subito moriun-
 ‘ tur.’

Hence it is not to be wonder-
 ed at, that Fab. ab Aquapen-
 dente, speaking of the cures by
 cautery and incision, says, ‘ Quæ
 ‘ tamen chirurgiæ uti videtis dif-
 ‘ ficiles admodum sunt, et inter
 ‘ subtilissimas haberi possunt;
 ‘ quo fit ut plerique patientes
 ‘ affectus perpetuo gestare quam
 ‘ his chirurgiis se submittere vel-
 ‘ lent.’

If the os pubis be laid bare,
 whether by cautery or caustic,
 some of the forementioned hazards
 must

must be incised; and if they do not penetrate to the bone, the intention will frequently be frustrated; that is, the intestine will slip down behind the scar, and put the patient under the same necessity of wearing a bandage, which he lay under before he submitted to so tedious, so painful, and so hazardous an experiment.

It is of some consequence to observe here, that these means are not proposed to preserve life; not as an anceps remedium to rescue the patient from death; but merely to rid him of the inconvenience of wearing a truss: which end they frequently prove incapable to accomplish; for all
4 the

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the best writers who have described these methods of cure, have directed the wearing a bandage afterward, from a fear, and (I suppose) a knowledge of their insufficiency: so that all the benefit that can be derived from having undergone so much, will frequently amount only, to being rather less liable to a new descent if the patient goes without a truss.

If these methods prove ineffectual, and the gut slips down behind the scar, the patient is in a worse, in a more perilous situation than he was before this attempt. For though the parts behind which the intestine passes in its descent are not sufficiently
united

united to keep it up within the belly, yet they will be so stiffen'd and hardened, and rendered so little capable of dilatation, that a stricture with all its symptoms will be more likely to happen now, than it would have been in the same person before such operation had been performed.

Some of the antients have proposed castration as a radical cure for a hernia. This they did openly and avowedly, and not with intention to conceal it, as some of their successors have, who, under a pretence of a new operation, have castrated numbers.

Celsus

Celsus proposes it as the best method in children, but forbids it in adults, Paulus and Fab. ab. Aquapendente both speak of it in the same manner.

Van Horne, in his Micro-
 techne says, ' sæpe etiam tanta
 ' est processus peritonei in alteru-
 ' tro latere distentio et hinc pro-
 ' lapsus intestini in scrotum, ut
 ' eidem alia ratione occurri non
 ' possit quam per ablationem di-
 ' dydi.'

Munnicks, speaking of the palliative methods says, ' hisce qui
' contentus non est chirurgiæ
' semetipsum tradat quæ per ab-
O ' latio-

‘ lationem didymi herniam peni-
‘ tus curare potis est.’

The cure of a rupture by castration needs no comment, as I take it for granted, that there are few people who would not prefer wearing a truss to being castrated.

The punctum aureum is performed thus :

The intestines being emptied and the hernia reduced, an incision is to be made through the skin and membrana adiposa, quite down to the upper part of the spermatic vessels. This incision must be of such length as to permit the operator to take up
up

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up the process either with his fingers or with a hook, and when it is thus lifted up, a golden wire is to be passed under it. This wire is to be so twisted as to prevent the descent of any thing down the tunica vaginalis, but not so tight as to restrain the circulation of the blood to the testicle.

Some have directed a leaden wire instead of a golden one, and others a filken ligature ; but the great uncertainty of them all is obvious. If the wire or whatever is passed round the process does not bind pretty tight, it will not prevent a descent ; if it binds too tight, it will restrain or stop the circulation of the

blood through the spermatic vessels to the testicle, and either injure or destroy it.

This operation had at one time a kind of vogue, and is described by several as practised by them, Guido, Parey, Scultetus, Franco, Smaltsius, Purmannus, Nuck, &c.

The royal-stitch or future is performed thus :

The intestine being emptied and the hernia replaced, an incision is to be made in such manner as to lay bare the spermatic process about two inches in length from the abdominal ring downward. When the process

cefs is laid bare and freed from the membranes about it, it must be properly held up by an assistant, while the surgeon with a needle and ligature makes a continued future, beginning at the lower part of the incision and ending at the upper. This future must comprehend so much of the membranes as to shut up the passage from the abdomen without injuring the spermatic vessels, and what remains above the future may be removed with a knife, or be left to slough off.

This is described by many of the old writers, with some little variation from each other, both in the manner and in the instru-

ments, but all tending to the same purpose.

Paulus, Albucasis, Fab. ab Aquapendente, Guido, Rolandus, &c. have all described an operation of this kind; and Parey and serjeant Wiseman, whether from themselves or any other, I know not, have offered an emendation in it, by directing the skin on the side next the pubis to be comprehended in the future, by which it is supposed that the future will be stronger and the union firmer.

The fatigue to the patient in this operation must be greater than that of the punctum aureum,

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reum, as the incision is larger, and the future must give some additional pain.

In some habits an incision of such membranous parts will always be hazardous: the scrotum will sometimes inflame, and the cellular membrane becoming sloughy will produce very painful and troublesome abscesses.

These are indeed disagreeable circumstances, but yet might be submitted to, if the cure proved always radical; which is far from being the case; this, like all others, frequently proving insufficient, permitting the intestine to pass down behind the

O 4 cicatrix,

cicatrix, and making a truss full as necessary afterward as before.

Some who have thought that the stitch added unnecessarily to the pain and hazard, have directed the incision to be made in the same manner as for the future, the membranes to be dissected out, and the fore to be firmly filled up and healed ; and have thought that by this means they could prevent any new descent.

This is so like to the operation for a bubonocoele, both in the manner of performing great part of it, and in its consequence as a radical cure, that it may be

2 looked

looked upon as the same: and how very fallacious and uncertain that operation proves in answering this end, every practitioner knows too well to depend upon it (in general) without a bandage.

The punctum aureum and royal future frequently proved destructive of the testicle, even in the most judicious hands; and when it got into those of ignorant pretenders, it became generally so: for they not knowing how to perform properly what they had undertaken, being afraid of the consequence of too strict a ligature, and finding it very easy after the incision was made to slip out the testicle, frequently
did

did so and went off undiscovered.

These are the principal methods which have been proposed for the radical cure of a hernia.

Infants, young children, and such whose ruptures have descended no lower than the groin, cannot stand in need of any of them.

The pain, the hazard, and the frequent disappointment from their inefficacy, have been the reasons why the surgeons have refused them in adults.

That these, and these only, have been their motives, may be proved

proved to the satisfaction of every candid inquirer.

The general charge brought against them is, that either they are not acquainted with the proper means, or that through obstinacy they will not make use of them: a charge both false and unjust. They always have been acquainted with them, many have tried them, and found them inefficacious.

The present practitioners have therefore disused them all: for which, instead of incurring censure, they ought to be rewarded with praise. They have candidly acknowledged the insufficiency of their art in some states
4 of

of this disease; and have freed mankind from a surgical process, which, though painful and hazardous to the patient, must have been very lucrative to the operator.

If on the other hand they had continued to practise these methods, notwithstanding their hazard and insufficiency, they would then have been highly blameable, and would have incurred the censure of being obstinate, inhuman, and mercenary; imputations which cannot now, with any kind of justice, be thrown on them, with regard to this subject.

Nor is this the only instance of the great lenity of the modern

dern surgery, compared with that of the antients; many more might be produced if necessary.

If this is doubted by any one; let him observe the escharotic medicines among the old writers. There he will find such unmanageable and deleterious applications, as sublimate and arsenic; such painful vegetable caustics, as the tithymalus, in frequent use.

Let him examine the antient manner of treating strumous glandular tumors, and old ulcers attended with caries, callus, or fungus.

Let him take a view of the old armamentaria chirurgica, and see
(with-

(without horror if he can) the almost infinite variety of cauteries which were so freely applied.

Let him look over their tracts de laqueis et machimentis, where he will find such ligatures and bandages as must be productive of pain and fever at best, and such complex pieces of machinery for simple fractures and luxations, as seem much more calculated to pull a man to pieces than to set him to rights.

And when he has done this, I would ask him what diseases or deformities were cured or relieved by these painful complex
me-

methods, which we leave uncured, now they are laid aside?

No disease has furnished and supported a more constant succession of pretenders than hernias.

The methods used by these people to obtain reputation and bread, have been different according to the abilities of the pretender. They who have had some smattering of anatomy or surgery, have adopted the caustic, the future, or the incision.

They have been more ignorant have pretended to specific remedies.

The

The methods by caustic and incision have been already described ; and specific remedies and applications have been so often tried, and so constantly found unsuccessful, that to say any thing about them would be wasting time.

I cannot conclude this section better than by a quotation from an old and much esteemed practitioner on this subject ; ‘ Necessarium est tibi scire locorum anatomiam, ut in cura non incidas in errorem ; nam multi de hac cura se cum audacia intromittunt, qui nec loca noverunt, nec ægritudinis differentiam ; quare quotidie cadunt in suis
‘ ope-

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‘ operationibus in errorem nec
‘ propter ab eorum infania se
‘ divertunt ; sed quanto minus
‘ sciunt tanto magis de curis se
‘ talibus intromittunt.

‘ O miser medice qui pro pe-
‘ cunia ponis corpus humanum in
‘ periculo mortis.’

P

S E C T.

S E C T. XII.

EXOMPHALOS, OR HERNIA UMBILICALIS,

IS so called from its situation; and, like the other species of hernia, has for its general contents a portion of intestine, or caul, or both: in old ones the quantity of omentum is sometimes very large.

Mr. Ranby found two ells and half of intestine in one of these and about a third part of the stomach; and all connected together.

Mr.

Mr. Gay and Mr. Nourse found the liver in the sac of an umbilical hernia.

Whatever are the contents, they are originally contained in a sac formed by the protrusion of the peritoneum.

In recent and small ruptures, this sac is very visible ; but in old and large ones, it is broke through at the knot of the navel by the weight and pressure of the contents, and is not always to be distinguished ; which is the reason of its being disputed whether this hernia has a sac or not.

Infants and young children are very subject to this in a small degree, from the separation of the funiculus; but they either get rid of it as they grow up and gather strength, or are easily cured by a proper bandage. It is of more consequence to get this disorder cured in female children than in male, that its return when they are become adult and pregnant, may be prevented as much as is possible. At this time it often happens, from the too great distension of the belly, or from some unguarded motion while the parts are upon the stretch. During gestation it is very troublesome, but after delivery, if the contents have contracted

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tracted no adhesion, they will return, and are easily restrained by a proper bandage.

If this bandage was put on in time, and constantly wore, this disease might generally be kept within moderate bounds, and the terrible consequences which frequently attend it, might often be prevented. The woman who has the smallest degree of it, and who from her age and situation has reason to expect children after its appearance, should be particularly careful to keep it restrained.

In some the entrance of the sac is large, and the parts easily reducible; in others they are dif-

ficult of reduction; and in others irreducible; of which last, many have for years been suspended in a proper bag, without giving much trouble.

They who are afflicted with this disorder are subject to cholics and diarrheas, and, if the passage be at all obstructed, to very troublesome vomitings; therefore it behoves them to take care to keep the intestinal tube as clean and free as they can, and to eat nothing likely to produce disturbance in that part.

The cure of this, as proposed by writers, is either radical or palliative.

Celsus,

Celsus, Paulus, Albucasis, Aquapendens, Guido, Severinus, Rolandus, and others propose a radical cure by ligature; Fab. ab Aquapendente proposes also aut medicamentis aut ferro umbilicum adurere; but after having described both methods, he lays them under such restraint from age, habit, size of the tumor, time of the year, &c. as amounts almost to a prohibition.

The methods by ligature are two. In one, the skin covering the tumor is to be lifted up by the finger and thumb, or by a small hook, to free it from the intestine underneath; and then a ligature is to be made round the

basis of the tumor so strict as to procure a mortification of all on this side the ligature. In the other, the skin is to be elevated in the same manner, and a needle armed with a double ligature is to be passed through the basis of the tumor, which is to be tied above and below, or on each side, so tight as to produce the same effect. Previous to drawing the ligature close, it is advised to make a small incision in the top of the tumor large enough to pass in the end of the finger, and with it depress the gut or omentum, and thereby prevent either of them from being engaged in the stricture.

The

The intention in both these methods is the same, viz. by destroying the lax skin covering the top of the tumor, to produce a cicatrix which shall bind so tight as to restrain the parts from any future protrusion.

In young subjects and small tumors, a bandage wore for a time generally proves sufficient; and in old persons and large tumors, I take it for granted, that nobody would attempt such a destruction of parts so situated; the hazard being obvious.

But suppose the subject young, and the tumor of such size and such state as to make it unlikely that

a bandage should do more than palliate ; that the skin covering the tumor is so lax as to make it improbable that it should ever recover its former state and lie smooth ; and, when it has been thus removed, that the cicatrix shall bind so tight as to prevent the protrusion of any of the contained parts : yet who can tell what will be the consequence of this tightness, this indilatability of the skin, in a state of pregnancy.

I mention this, because I have seen very terrible consequences from the bursting of a cicatrix on the navel during gestation, though the cicatrix was from an abscess opened by incision, and
con-

consequently cannot be supposed to be equal either in size or resistance to that produced by the operation here proposed.

Perhaps less objection may lie against this method in male subjects: but as the generality of umbilical hernias in adults are in female subjects, and as the majority of them make their appearance during gestation, the circumstance of pregnancy should always be considered, however young the patient may be at the time the operation is proposed.

This, like the other species of hernia, becomes the subject of a surgical operation, when the intestine is irreducible by the hand,

hand, and the symptoms of stricture run high : but here every means should be tried before the operation is proposed ; for its success is so infrequent as to make it by no means a desirable thing.

The operation consists in dividing the skin and sac either at one or two incisions, in a longitudinal, crucial, or oval form, as shall best suit the tumor or please the operator ; and having divided the stricture, the intestine, if sound and not adherent, is to be returned into the belly ; if the intestine is gangrenous, the altered part must be removed, and the rest managed in such manner as to derive the fœcal discharge through the

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the wound at the navel, by which means some people have preserved their life, if such a state can be called living.

Strangulations of the omentum in this species of hernia sometimes produce an abscess, which should be opened with some caution; and often prove very troublesome to manage.

SECT.

S E C T. XIII.

HERNIA VENTRALIS

MAY appear in almost any point of the fore-part of the belly, but is most frequently found between the recti muscles.

The portion of intestine is always contained in a hernial sac, and when reduced should be kept in its place by bandage ; if engaged in a stricture which the hand alone cannot relieve, that stricture must be carefully and properly divided, and the parts returned.

The

The hernia foraminis ovalis, or protrusion through that foramen which is formed by the ischium and pubis, is mentioned by one or two of the French writers ; but as I have never seen it, I can say nothing about it.

All the parts contained in the cavity of the abdomen or pelvis are capable, by the dilatation of their connecting membranes, of being so thrust forth, as to occasion external swellings, which are called herniæ.

The uterus has passed through the ring of the abdominal muscle very soon after impregnation or has been impregnated, and remained

mained there during the whole time of gestation.

Sennertus relates one of this sort which made its first appearance after a blow on the groin. The uterus remained without the ring the whole nine months ; and the child was taken out alive, by incision.

Ruyfch saw the same case after an abscess in the groin ; the tumor increased gradually, and at last reached the knees of the woman, who when she sat down rested it on her thighs ; the child was taken out alive.

The same author saw an inguinal hernia formed by a large spleen

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spleen which had passed the aperture in the muscle.

I have myself seen the ovaria hanging without the abdomen, having passed the openings of the oblique muscles. They were so very troublesome and painful to the poor woman, that she could not get her bread till they were removed. Mr. Nourse took them away, and the woman did very well.

Q

SECT

S E C T. XIV.

HERNIA CYSTICA.

THE vesica urinaria is also liable to be thrust forth from its proper situation, either through the abdominal ring or under Poupart's ligament.

This is no frequent species of rupture; but the instances produced of it, though but few in number, are of good authority.

The writers who mention this as having seen it themselves, are J. Dom. Sala, Platerus Bonetus, Ruysch, Petit, Mery, and M. Verdier; the last of whom has

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published an account of some seen by himself and others.

In one of these cases, the urachus and impervious umbilical artery on the left side were drawn thro' the ring of the oblique muscle into the scrotum.

In another, four stones were found.

Ruyfch gives an account of one complicated with a bubonocoele.

M. Petit felt several small stones in one, which were afterward discharged by the urethra.

Bartholin says, that J. Dom. Sala was the first discoverer of this disease; and quotes a case from him in which the patient had all the symptoms of the stone in his bladder, which stone could never be felt by a catheter, but was afterward found in that portion of the bladder which had passed the ring and formed the hernia.

From what these gentlemen have said, and from considering the structure, situation and connections of the bladder, it appears, that this species of hernia may be either inguinal or femoral.

That as the bladder is only in part covered by the peritoneum, and must insinuate itself between the peritoneum and muscle in order to pass the ring, it can have no hernial sac; and that when complicated with a bubo-nocele, that portion of the bladder which forms the hernia cystica must lie between the hernia intestinalis and spermatic chord, i. e. the intestinal hernia must lie anterior to the cystic hernia.

When a small portion of the bladder has insinuated itself into the abdominal ring, more will easily follow: and when so much has passed as to drag the upper
and

and hinder part, the peritoneum which covers that part of it will follow; and thus a sac be formed for the reception of a portion of gut or caul to form another species of herniâ. Hence the different situation of the two herniæ in the same subject; for in the hernia cystica the bladder must precede the sac, consequently cannot be contained in it; and hence the hernial sac with its contents must lye anterior to the hernia cystica.

If it arrive to any size, the patient cannot discharge his urine without lifting up and compressing the tumor.

While

While recent it will be free, easily reduced, and may be kept in its proper place by a bandage; but if it be adherent, the patient must be contented with such relief as a proper suspensory can give him.

In the case of complication with an intestinal rupture, great care must be taken (if the operation become necessary) to avoid opening the bladder. If this should be done by accident, the portion forming the hernia cystica must not be returned into the pelvis, where the shedding the urine would be of bad consequence; and to assist the healing of the wound
in

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in this case, a flexible chain catheter, or a hollow bougie, should be kept in the urethra for some time.

POST.



POSTSCRIPT.

WHEN I began to put the preceding papers in order, I had two principal intentions.

One was, to lay before the young practitioner a plain, practical account of the nature, symptoms, and method of treating the three most frequent species of ruptures, and to endeavour to remove some of that prevailing fear of the operation, by which I apprehend many lives may

R be

POSTSCRIPT.

be preserved: in doing this I have been very careful not to omit any thing which appears to me useful or necessary; and have designedly passed over several minutiae to be found in writers on this subject, which are rather matter of ingenious speculation than instruction, and are more likely to mislead than to inform a reader not versed in business; in short, my endeavour has been to advance nothing in the theory but what is fairly deducible from the anatomical structure of the parts; nor any thing in the practice, but what I know from my own experience to be true.

My

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My other intention was to endeavour to remove the prejudice against the profession (with regard to this disease) which the repeated assertions of advertising quacks has raised; and which a perfect ignorance of the nature of the disease and the parts concerned in it still supports.

The pains I have taken to explain this to the unknowing, in as clear a manner as I can, has I fear rendered me prolix and tedious to those who were masters of the subject before; but as the brevity, sufficient for the latter, would have been obscurity to the former,

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former, I hope this, the true reason, will be admitted as my apology.

F I N I S.

CORRIGENDA.

Page 25, line 6, after body add except the sac; p. 27, second line from the bottom, dele of life; p. 57, line ult. for timely, read early; p. 68, line 3, for tumor r. hernia; line penult, after or add other; p. 77, line 3, for foreceps r. forceps; p. 79, line 14, for was r. were; p. 105, line 3, after this add mortified; p. 111, line 15, for always r. generally; p. 127, line 3, for by r. with; p. 129, line 1, after with add the; p. 146, line 1, dele if; p. 161, line 10, dele much; line 16, for side r. edge.

